



ON THE ROAD TO **LOW-CARBON** MOBILITY



SMART TECHNOLOGY
FOR SMARTER MOBILITY

CONTENTS

01

COMMITTED TO
THE CLIMATE
TRANSITION
P. 8

02

AN INDUSTRY
TRAILBLAZER
P. 18

03

A COMMITMENT
SPANNING THE
ENTIRE VALUE
CHAIN
P. 26

04

HAND IN HAND
WITH OTHER
STAKEHOLDERS
P. 40

05

EXPERT GUIDE
P. 52



DRAWN UP IN LINE WITH TCFD RECOMMENDATIONS

This Climate Report outlines:

- how the climate challenge is factored in at the highest level of the company and the governance of Valeo's carbon plan (CAP 50);
- global mobility transformation scenarios;
- Valeo's value creation strategy;
- risks and opportunities related to climate change;
- the objectives of the CAP 50 plan to reduce CO₂ emissions;
- practical initiatives taken to reduce the Group's carbon footprint (i.e., Scope 1, 2 and 3 emissions).

COMMITMENT AND TRANSPARENCY

VALEO'S FIRST CLIMATE REPORT

As a world leader in electrification and partner to all automakers and new mobility players, Valeo is taking a further step forward and making strong commitments to the environment, in an approach that is central to its corporate purpose and its strategy. As it continues to develop its range of electrification and CO₂ emissions reduction technologies, the Group is committed to reducing the carbon footprint of its entire value chain. Its goal is to contribute to carbon neutrality through 2050 and to have cut its total emissions by 45% by 2030*.

This first Climate Report presents the commitment, trajectory, governance system and actions that Valeo is deploying to step up its contribution to carbon neutrality. The more technical Expert Guide details its understanding of climate change-related developments and provides an assessment of current risks and opportunities, in line with Task Force on Climate-Related Financial Disclosures (TCFD) recommendations**.

This inaugural Climate Report also introduces a new way of interacting with Valeo's stakeholders, in line with the Group's renowned transparency and in compliance with regulations.

* Taking into account the emissions savings generated by Valeo electrification technologies fitted to customers' vehicles.

** See glossary, pages 71-72.

VALEO IS WORKING FOR CLEANER, SAFER AND SMARTER MOBILITY

As a technology company and partner to all automakers and new mobility players, Valeo is focusing on four key areas: electrification, advanced driving assistance systems, reinventing the interior experience and lighting.

VALEO PLEDGES TO CONTRIBUTE TO CARBON NEUTRALITY

BY 2030

75%

reduction in emissions relating to operating activities, plants, manufacturing processes and energy supply (Scopes 1 and 2)*

15%

reduction in emissions relating to its supply chain (upstream Scope 3)*

50%

reduction in emissions relating to the use of technologies sold by the Group, including the benefits of Valeo electrification technologies (downstream Scope 3)*

BY 2050

IN EUROPE

Contribute to the European Union's Green Deal carbon neutrality objective (Scopes 1, 2 and 3)

WORLDWIDE

Contribute to carbon neutrality (Scopes 1, 2 and upstream 3)

A RECOGNIZED APPROACH

Valeo is renowned for its transparency and its non-financial performance. In 2021, the Group received top scores from the various rating agencies, including an "A-" from the Carbon Disclosure Project (CDP Climate Change)*, powerful recognition of the maturity of Valeo's carbon reporting process, its ambitious reduction targets and the strength of the actions implemented internally.

* See glossary, pages 71-72. (1) See "SBTi methodology", page 68.

* See glossary, pages 71-72.

ENVIRONMENTAL COMMITMENT KEY FIGURES

€10 BN

HAVE BEEN ALLOCATED BY VALEO SINCE 2010 TO TECHNOLOGIES THAT HELP REDUCE CO₂ EMISSIONS

1/3

ONE IN THREE NEW CARS WORLDWIDE IS FITTED WITH A VALEO ELECTRIC SOLUTION THAT HELPS REDUCE CO₂ EMISSIONS

NEARLY

100

ELECTRIC AND PLUG-IN HYBRID VEHICLE MODELS WILL BE EQUIPPED WITH HIGH-VOLTAGE ELECTRIFICATION SOLUTIONS BY THE END OF 2022

€400 M

WILL BE INVESTED BY 2030 TO TRANSFORM VALEO'S PLANTS AND ENERGY SUPPLY

60%

OF THE GROUP'S SALES ARE GENERATED FROM TECHNOLOGIES THAT HELP REDUCE CO₂ EMISSIONS

MOVE UP

At the beginning of 2022, the Group unveiled its Move Up strategic plan to accelerate in a rapidly evolving sector. Move Up means capitalizing today on tomorrow's mobility. With this plan, Valeo is building an even more solid Group, which will be both technologically stronger and operationally more efficient.



VALEO IN FIGURES (2021)

17.3

BILLION EUROS IN SALES

8.7%

OF ITS SALES INVESTED IN R&D

103,300

EMPLOYEES

31

COUNTRIES

184

PLANTS

64

R&D CENTERS

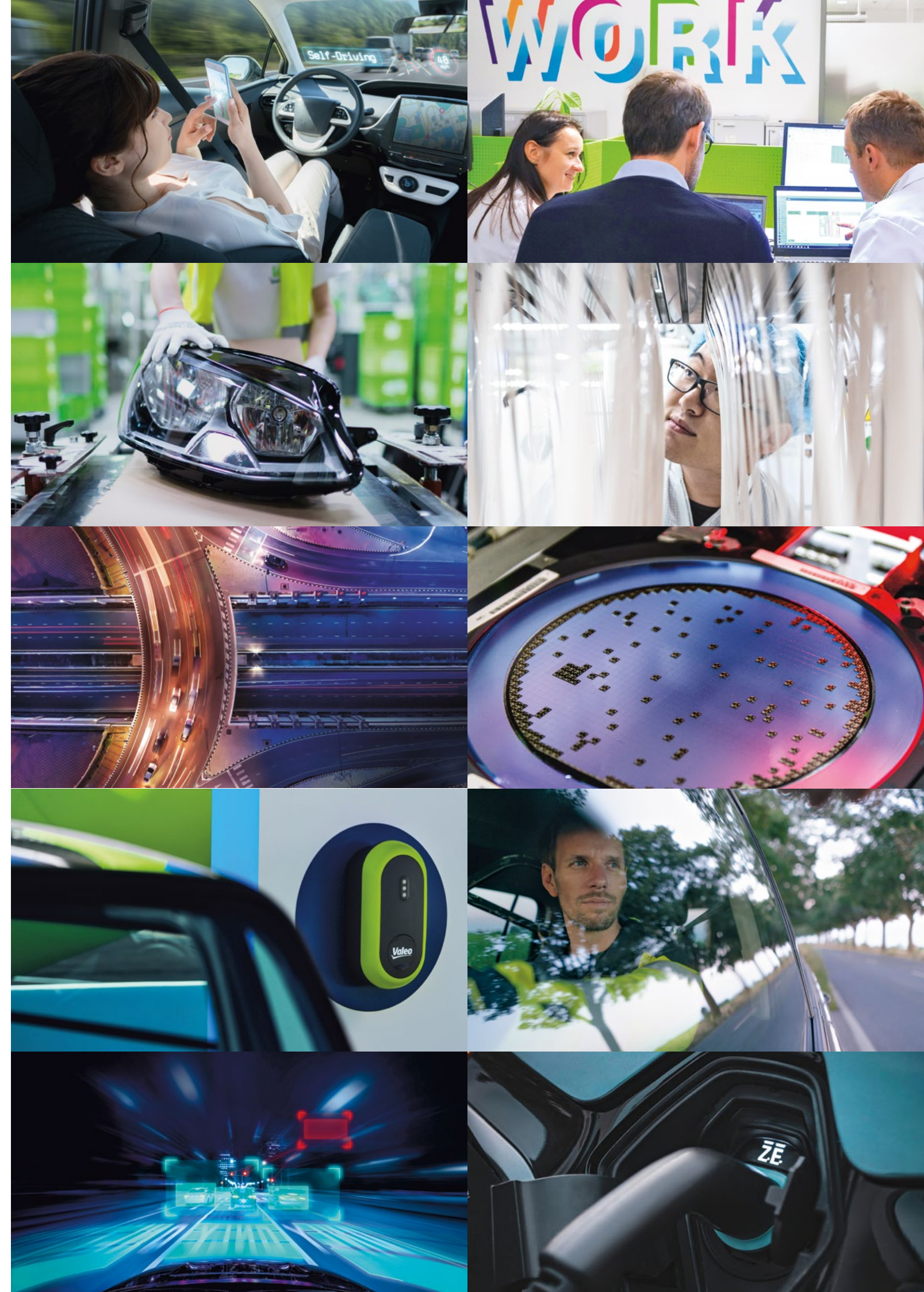
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DISTRIBUTION PLATFORMS

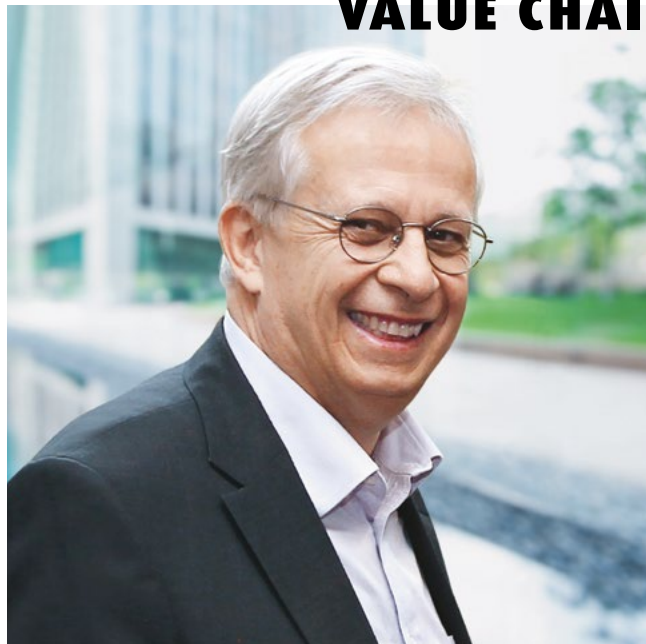
CORPORATE PURPOSE

As a tech company, Valeo's goal is to **play a major role** in the mobility of tomorrow. In keeping with today's environmental and social issues, future mobility must be greener, safer and more diverse, and must also improve the **well-being** and **safety** of citizens and consumers.

We will achieve **this goal** thanks to our unique positioning and **leadership in technology** in the areas that are driving the transformation of the automotive industry and sustainable mobility across the globe. This positioning and this leadership are rooted in our **expertise, innovations** and **operational excellence**. They are supported by our values and business culture and built to **serve our customers, employees, shareholders** and the **regions** where we operate.



“BY 2030, WE WILL BE ALMOST HALFWAY THERE: VALEO’S EMISSIONS WILL HAVE DECREASED BY 45% FROM 2019 ACROSS ITS ENTIRE VALUE CHAIN.”



JACQUES ASCHENBROICH

CHAIRMAN OF THE BOARD OF DIRECTORS

These commitments are the natural next step in Valeo’s transformation in the area of carbon emissions, which I have been leading since 2009 with the aim of making the Group a key player in vehicle electrification and a company recognized for the transparency of its commitments and its sustainable development policy. As early as 2009, we were one of the first companies in the automotive industry to place a strategic focus on reducing vehicle emissions, by gradually building a comprehensive portfolio of electrification solutions. These products represented more than 60% of our original equipment sales in 2021 and position Valeo as an undisputed leader in vehicle electrification.

Today, the mobility sector is faced with the challenge of reducing its carbon footprint across the entire value chain. While we were already pioneers in this area by making the decarbonization of our technologies a key strategic focus, we are going much further now and setting ourselves even more ambitious goals that concern our entire value chain. Our “CAP 50” plan to reduce CO₂ emissions is at the heart of our corporate strategy.

Once again, we are staying ahead of the curve to anticipate a trend that is certain to be a decisive factor in tomorrow’s market. It is precisely this strong sense of direction at these crucial junctures that gives Valeo its status as a sustainable mobility leader.

The sixth report of the Intergovernmental Panel on Climate Change (IPCC) was another reminder that cities will drive the transition. Home to more than 50% of the world’s population, these fragile areas have no choice but to accelerate their adaptation to climate risks. The development of sustainable, low-greenhouse-gas (GHG)* emission modes of transportation will be central to this effort, as demand for mobility will continue to grow.

Conscious of this essential transition and of its responsibility as a key mobility player, Valeo took a major step forward in 2021 by formally committing to contributing to carbon neutrality through 2050. By 2030, we will be halfway there: Valeo’s emissions will have decreased by 45% across its entire value chain – including emissions from its suppliers, its own operating activities and the end use of its products across their whole lifespan – compared with 2019.

* See glossary, pages 71-72.

In February 2022, I announced the launch of our transformation plan, Move Up. Designed to consolidate our financial performance until 2025, Move Up draws on a number of fundamentals to ensure a successful outcome. One of these success factors is the continued rollout of our CAP 50 plan. As part of this plan to contribute to carbon neutrality, Valeo has set major intermediate targets for 2025 and 2030, with the aim of reducing all its emissions by almost half by the 2030 milestone.

This is a huge transformation project for our operations, our value chain and our products. In future years, it will involve not just Valeo but also the entire automotive industry. Our goal is to reduce the emissions within our control as a first priority and to achieve annual reductions in line with our 2030 target. A dedicated governance system has been set up, involving all the Group’s functional networks, i.e., Industrial, Logistics, Purchasing, Projects, R&D, Sales, Finance, Strategy and Sustainable Development. Objectives and roadmaps have been defined for each network.

By end-2021, each of Valeo’s 184 plants will have developed a dedicated roadmap. Similarly, each industrial and product platform has identified the key levers for reducing carbon emissions in the three scopes.

To support this effort, we have allocated 400 million euros to industrial projects, in addition to our R&D investments in automotive electrification over the next decade. The transformation requires a commitment from us beyond the scope of our plants and products. The carbon challenge has to be a priority that we share with our suppliers. That is why we aim to support their carbon transition and develop new products, materials and solutions. In our rapidly changing ecosystem, I am convinced that this plan, which is mobilizing all of Valeo’s employees, will enable us to make the coming transformation successful.

* See glossary, pages 71-72.



“THIS PLAN IS A COLLECTIVE COMMITMENT AND WILL ENABLE US TO MAKE THE COMING TRANSFORMATION SUCCESSFUL.”

CHRISTOPHE PÉRILLAT

CHIEF EXECUTIVE OFFICER



COMMITTED

TO THE
CLIMATE
TRANSITION

Conscious of the critical shifts taking place in the mobility sector, Valeo has drawn up a CAP 50 roadmap, with the goal of actively contributing to carbon neutrality through 2050. **Here is an overview of the three trends that are transforming mobility.**



01



A MORE AMBITIOUS REGULATORY FRAMEWORK

Since January 1, 2021, European regulations have limited the average emissions of new passenger cars to 95 g CO₂/km. The regulatory framework is being tightened across the board and the target set for 2030 is 59 g CO₂/km. This target will be lowered under the Green Deal, the European Commission's proposal to phase out sales of internal combustion engine vehicles by 2035 and to reduce CO₂ emissions by more than half by 2030 vs. 2021 (compared with the current target of 37.5% by 2030).

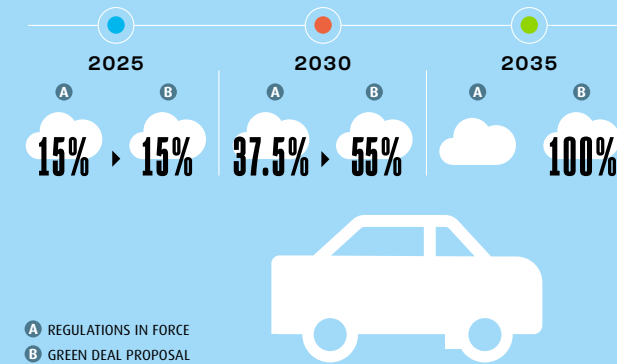
Some countries have committed to banning internal combustion engine vehicles from 2025 (Norway), 2030 (Denmark and the United Kingdom), 2035 (Japan and China) and 2040 (France and Germany). At the same time, cities and states are setting new frameworks as they seek to limit the carbon impact of vehicle usage. In the face of climate change and urban pollution, environmental regulations are becoming more ambitious and cities are lining up as regulators – adapting their infrastructure while encouraging new mobility behaviors through coercive regulations and incentives.

THE EUROPEAN UNION'S GREEN DEAL

The goal: to reduce net greenhouse gas emissions by at least 55% by 2030, compared with 1990 levels. In 2019, the European Union drew up an initial roadmap to reduce car emissions by 37.5% compared with 2021 (when the limit was set at 95 g/km).

TARGETS FOR REDUCING CO₂ EMISSIONS

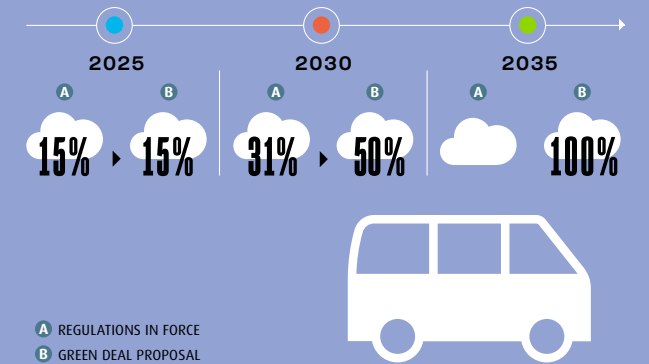
from passenger cars brought to the European market (see CAFE standards)*



European Commission, Green Deal of July 14, 2021. * See glossary, pages 71-72.

TARGETS FOR REDUCING CO₂ EMISSIONS

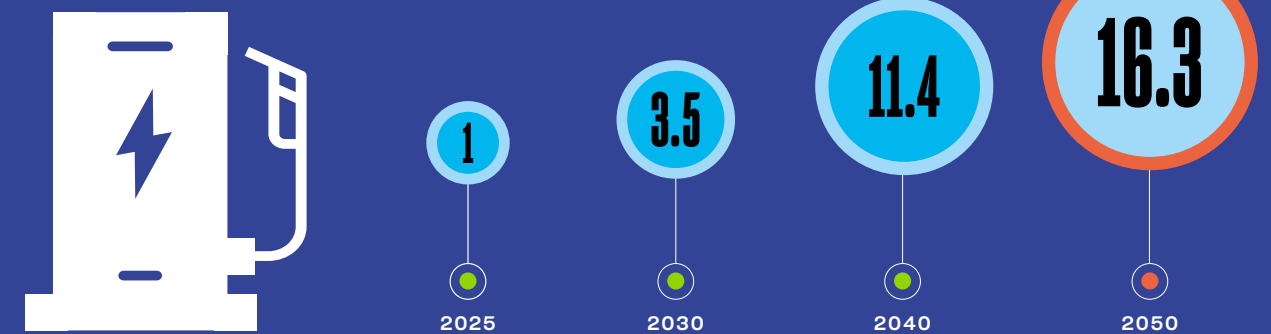
from commercial vehicles brought to the European market (see CAFE standards)



European Commission, Green Deal of July 14, 2021.

TARGETS FOR THE ROLLOUT OF CHARGING STATIONS IN EUROPE

(for electric vehicles accessible in the public space, in millions of terminals)



European Commission, Green Deal of July 14, 2021.

ZERO EMISSIONS

during the vehicle use phase

REGULATORS AIM TO REACH THIS TARGET FOR NEW VEHICLES SOLD, BY 2035 IN EUROPE, 2040 IN THE UNITED STATES, CHINA, INDIA AND JAPAN, AND 2045 IN SOUTH KOREA.

700

REGULATIONS WORLDWIDE RESTRICT VEHICLE ACCESS TO CITIES. BEIJING HAS INTRODUCED AN ODD-EVEN LICENSE PLATE POLICY AND IMPOSED A TOTAL BAN ON THE MOST HIGH-EMISSION VEHICLES⁽¹⁾.

(1) Frost & Sullivan (December 2020).

CONSUMER TAKE-UP OF ELECTRIC VEHICLES



Conscious of climate issues, **consumers are increasingly interested in purchasing an electric vehicle.** In the United States, Europe and China, nearly 20% are interested in this technology, a percentage that has been steadily increasing since 2014. The eco-friendly “zero emissions” factor is a major draw: 54% of consumers in the United States, 48% in Europe and 44% in China value the fact that electric vehicles help protect the environment⁽¹⁾. This enthusiasm is an opportunity to develop Valeo’s vehicle electrification operations.

Price and travel range barriers are gradually falling. Some consumers need a range of less than 300 km, while others are looking for 500 km. This segmentation opens the door to lighter, alternative urban mobility solutions, such as Citroën’s AMI powered by the Valeo 48V motor. Meanwhile, numerous analyses have shown that electric vehicles are becoming increasingly affordable. This is for two reasons: the use of specific platforms, which lowers production costs, and the depreciation of capital expenditure.

With our mature technology offering, we are in a position to respond to this enthusiasm by offering a wide range of products in line with consumer needs. Combined with regulatory changes, consumer buy-in for the electric car has acted as a catalyst for the entire automotive industry.

⁽¹⁾ “Automotive & Mobility Consumer Trends”, Sigma 2020, March 2021.

Widespread adoption of electric vehicles.

In Europe, more than 40% of consumers are interested in alternative powertrain solutions for their next vehicle purchase. In China, electric vehicles have become fashionable as they are perceived as “futuristic”, “innovative” and “young”.

Source: Sigma Consumer Study, 2020.

**“IN THE COMING
YEARS, URBAN
MOBILITY WILL BE
ELECTRIC AND
AFFORDABLE.”**

A reason for this is that increased volumes and platformization in the automotive industry are equipping and enabling new urban mobility solutions.”

75% of consumers in Europe, **62%** in North America and **57%** in China believe that the electric vehicle production phase needs to be equally low-emission. End-of-life recycling is also seen as important. These are all signs of consumers’ increased attentiveness to vehicles’ environmental impact⁽¹⁾.

⁽¹⁾ World Economic Forum and McKinsey Study, September 2020.



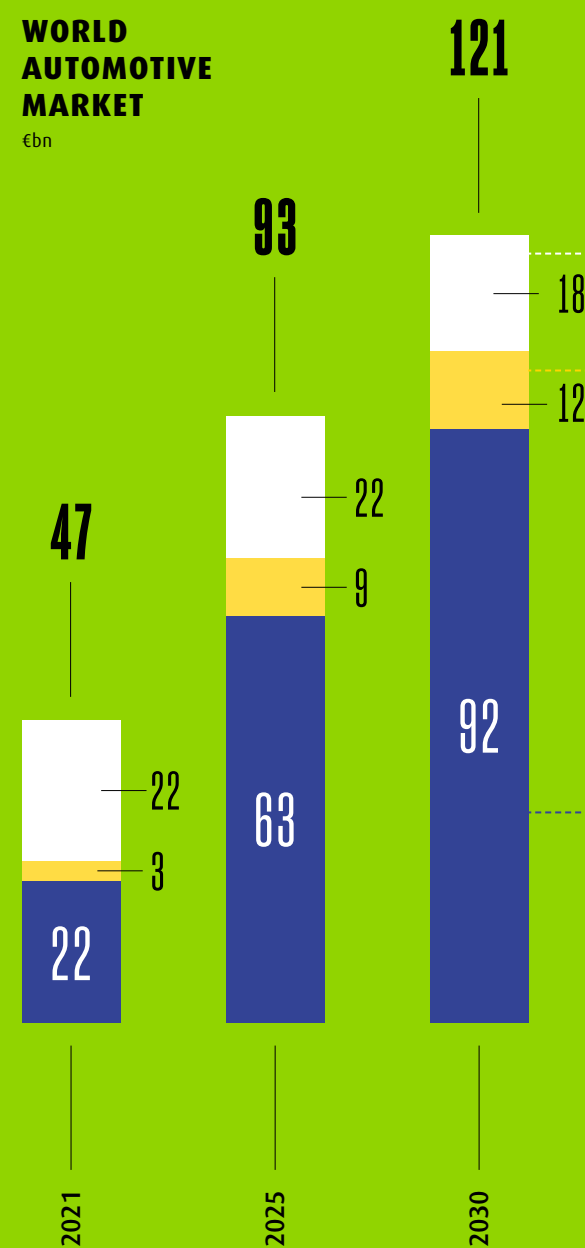
AN ACCELERATING ELECTRIFICATION MARKET

The electric vehicle market is experiencing unprecedented hyper-growth, and forecasts are also very positive. It is estimated that the automotive powertrain market will be worth more than 90 billion euros by 2025 and more than 120 billion euros by 2030. The market for high-voltage automotive powertrain systems is expected to soar from 22 billion euros in 2021 to 92 billion euros by 2030⁽¹⁾. Meanwhile, the mild-hybrid market will continue to grow until 2030, as the market for internal combustion engine technologies begins to shrink from 2025.

Sales of diesel-powered vehicles, on the other hand, continue to decline and are expected to account for less than 6% of sales by 2030. In countries that don't yet plan to ban internal combustion engines, such vehicles will be required to generate fewer emissions and therefore use mild-hybrid technologies.

⁽¹⁾ Valeo estimates.

WORLD AUTOMOTIVE MARKET
€bn



Source: S&P Global Mobility and Valeo estimates.

Alternator



Transmission



ICE VEHICLES

48V systems



48V converter



Hybrid transmissions

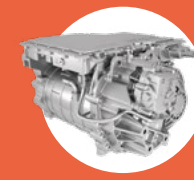


48V HYBRIDIZATION

Electric powertrain



Electric motor



Inverter



Onboard battery charger and DCDC converter



HIGH-VOLTAGE ELECTRIFICATION

600 NEW ELECTRIC VEHICLE MODELS EXPECTED BY 2025

This represents a historic shift in automakers' portfolios. And the strategic announcements are rapidly increasing: Ford will be all-electric in Europe by 2030, as will Volvo; General Motors will stop selling internal combustion-engine vehicles by 2035; and Honda will sell electric and hydrogen vehicles only by 2040.



PROGRESS IS WELL UNDERWAY, ACCELERATED BY THE GROUP'S NEW CAP 50 PLAN

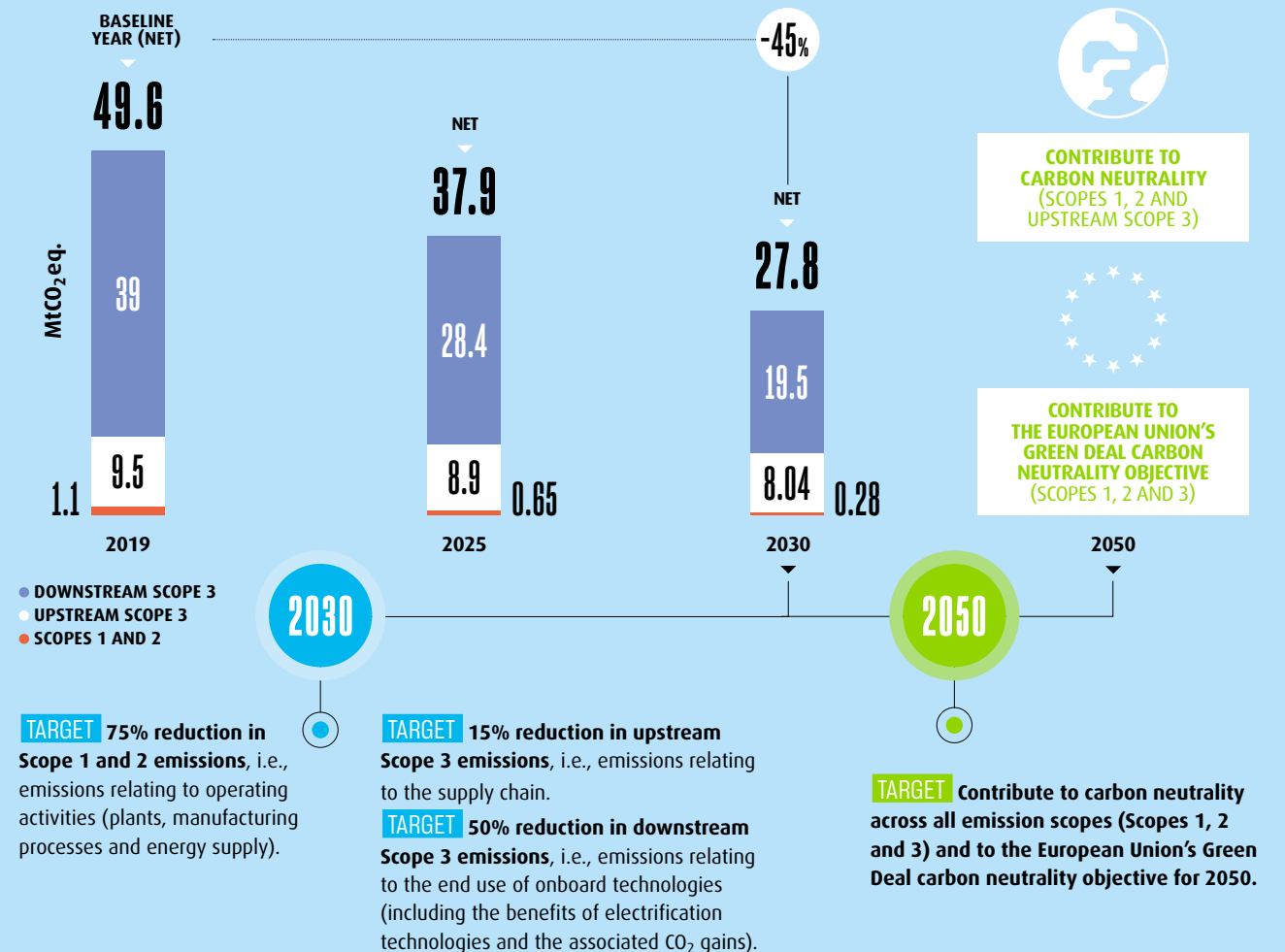
As a leader in electrification and a pioneer in electric vehicle technologies, Valeo has been committed to reducing greenhouse gas emissions for over ten years.

Over the past decade, the Group has structured its product portfolio to meet the major challenges of mobility: **decarbonization and safety**. Since 2009, we have developed a full range of low- and high-voltage vehicle electrification technology, and the thermal management solutions that go with it. **Today, 60% of Valeo's sales stem from technologies that contribute to reducing CO₂ emissions.**

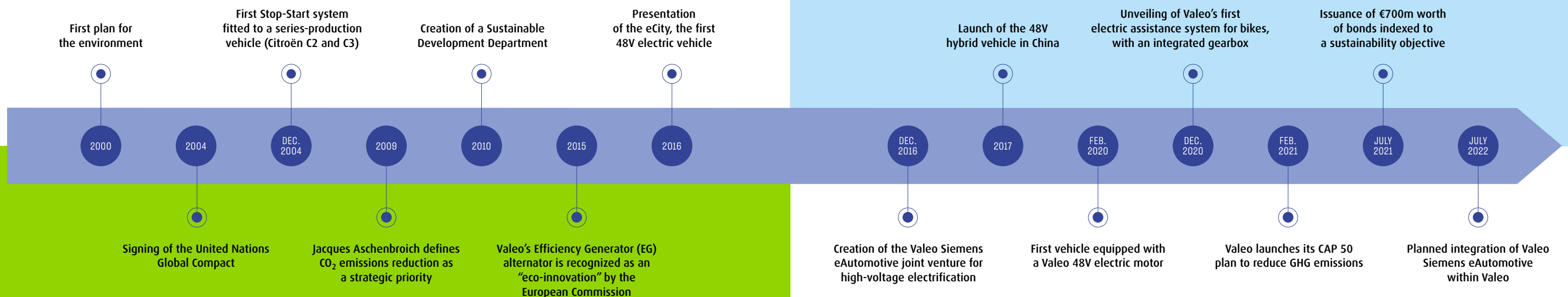
In parallel, the Group has set up multi-year plans to reduce its environmental footprint, and constantly monitors emissions and resource consumption indicators. **In 2021, emissions from operating activities (Scopes 1 and 2) as a percentage of sales had decreased by nearly 20% over 11 years (since 2009)** thanks to an ongoing effort to optimize production processes.

VALEO'S CAP 50 PLAN

Goal: to contribute to carbon neutrality across our entire value chain through 2050. Valeo has set an initial intermediate step aiming at a 45% emissions reduction in 11 years.



► Valeo has set itself two reduction targets for 2025 and for 2030, one aligned with the recommendations of the SBTi (known as the SBTi target), and the other specific to its corporate commitment (known as the NET target). For more details, see the Expert Guide, page 55.



AN INDUSTRY

TRAILBLAZER

02



Since Jacques Aschenbroich took the helm at Valeo in 2009, the Group has made reducing carbon emissions from mobility a strategic priority. **As a world leader in low- and high-voltage electrification solutions**, the Group covers all low-carbon mobility segments and applications.

ELECTRIFICATION TECHNOLOGIES ADAPTED TO ALL FORMS OF MOBILITY

Reducing CO₂ emissions involves making electrification technologies widely available. Valeo's strength lies in its ability to meet this challenge for all types of vehicle.

All of Valeo's innovations are inspired by one commitment: working toward mobility that helps reduce CO₂ emissions and consumes less energy. The Group sees this challenge as twofold – requiring solutions that are both carbon neutral and affordable. That's why Valeo provides the world's most advanced technologies to as many people as possible around the world. Its technologies can be fitted to all forms of mobility in all their diversity – from cars to bikes to delivery droids.

“AN ELECTRIC MOBILITY PIONEER, IN 2004 VALEO INVENTED THE STOP-START SYSTEM. TODAY, THIS SYSTEM IS FITTED ON VIRTUALLY ALL NEW VEHICLES.”

40%
OF GLOBAL ORDERS
FOR 48V SYSTEMS IN 2021
WERE PLACED WITH VALEO.

A PRODUCT PORTFOLIO FOR ALL FORMS OF MOBILITY

As a world leader in both low- and high-voltage electrification solutions, and state-of-the-art thermal management systems, the Group boasts the broadest portfolio of technologies on the market, covering all segments and uses, from affordable hybrid solutions to the most powerful systems.

SMALL ELECTRIC VEHICLES

“Zero emission” areas
Small vehicle solutions
≤ 100 km
≤ 50 km/h

LIGHT ELECTRIC VEHICLES

“Zero emission” areas
Small vehicle solutions
100-150 km
Up to 100 km/h

LIGHT HYBRID VEHICLES

4% to 6% in CO₂ gains according to the WLTP⁽¹⁾
First level of hybridization

HYBRID VEHICLES

Up to 15% in CO₂ gains according to the WLTP (20% in high-voltage applications)
Diesel alternatives
Affordable cost

PLUG-IN HYBRID VEHICLES

Up to 70% in CO₂ gains according to the WLTP (40% in 48V applications)
≥ 50 km (25 km for 48V “City” systems)

ALL-ELECTRIC VEHICLES

Zero exhaust-system CO₂ emissions
Performance:
≥ 200-300 km (depending on driving conditions)
≥ 130 km/h

ALL-HYDROGEN VEHICLES

For specific use cases to round out battery-based electric mobility
Examples of use cases: commercial vehicles with rapid charge requirements, trucks

LOW-VOLTAGE ELECTRIFICATION

HIGH-VOLTAGE ELECTRIFICATION

(1) WLTP: Worldwide harmonized Light Vehicles Test Procedure.

HIGH- AND LOW-VOLTAGE: VALEO, NUMBER ONE IN ELECTRIFICATION TECHNOLOGIES

Valeo is a leader in high-voltage electrification and a key player in 48V electric mobility solutions.

After starting out as a pioneer, Valeo is now a leader in the 48V market, offering affordable modular systems. They are gradually becoming a standard, both as a mild-hybrid solution for internal combustion-engine cars and as a solution for all-electric vehicles. Better still, Valeo's 48V systems can be used on new forms of mobility including bikes, scooters, three-wheelers, driverless taxis and delivery droids. 48V systems will play a vital role in the gradual transition to electric mobility. There are still one or two generations of internal combustion engines to come, and these will require adding on 48V electrification systems.

Valeo and Valeo Siemens eAutomotive offer a full portfolio of innovative, premium solutions for all electric vehicles, from hybrids to battery-powered vehicles.

The plan to fully integrate the Valeo Siemens eAutomotive joint venture into the Group after July 1, 2022 will mark a decisive step forward in a market that is expected to grow at an average annual rate of 17.5% by 2030. By the end of 2022, more than 90 electric and plug-in hybrid models will be fitted with Valeo Siemens eAutomotive technologies, including electric powertrain systems, inverters (the brains of the system) and reducers.

The 48V electric motor, which produces up to 25 kW of power, integrates an electric motor and an inverter (the brain of the system) and is used to convert vehicles to hybrid vehicles.



The high-power motor can assist the combustion engine in hybrid cars and, in plug-in hybrid and all-electric models, even drive the car forward electrically on its own in the case of three-in-one systems incorporating a reducer as well as an electric motor and an inverter.



▲ Valeo Siemens eAutomotive powers the Mercedes-Benz EQS.

The Mercedes-Benz EQS, the premium automaker's flagship electric car, is fully powered by a Valeo Siemens eAutomotive system comprising two electric motors – the 300 kW rear eAxe and the 170 kW front eAxe – as well as the inverter and reducer.

◀ Valeo Smart eBike System, the world's most high-performance electric bike assistance system.

Having adapted its 48V motor to the electric bicycle, Valeo offers the most high-performance system to date, integrating both an electric motor and an adaptive seven-speed automatic gearbox in a single module. In a fast-growing market, its technology can be tailored to all needs and uses, including city bikes, mountain bikes and cargo bikes for transporting loads. This innovation solidifies Valeo's position as a major player in electric mobility.



**THE 48V
SYSTEM**
ALSO POWERING NEW
FORMS OF MOBILITY

VALEO, ENABLING HYDROGEN MOBILITY

Alongside electric vehicles, hydrogen is emerging as another solution for decarbonizing mobility, particularly for intensive use vehicles such as taxis, buses, trucks and delivery vehicles, which require minimal charging times. Some of the power and voltage conversion technologies developed by Valeo for battery electric vehicles may also be adapted to hydrogen vehicles. Initial developments are underway, in partnership with stakeholders in the hydrogen mobility ecosystem.

AT THE CUTTING EDGE OF THE THERMAL SYSTEMS CRUCIAL TO ELECTRIC MOBILITY

Without thermal systems, electric vehicles could not function. Valeo uses its expertise in thermal management and climate control to develop comprehensive, efficient solutions.

Preserving the battery's travel range without compromising on passenger comfort. Thanks to its expertise, Valeo develops comprehensive thermal systems, i.e., a refrigerant and glycol circuit running through the battery, the cabin and the electric powertrain to the front-end heat extraction module. This involves balancing energy – for example, by cooling the battery, the air conditioning loop recovers heat that it can redirect to the vehicle cabin.

Speeding up electric vehicle charge times while optimizing battery life. The thermal systems developed by Valeo offer solutions to protect the battery by heating or cooling the core of the cells to keep them at the right temperature during charging and driving.

Combining energy consumption and vehicle travel range. By optimizing battery performance and the energy-intensive processes of heating, air conditioning and defogging, Valeo is reducing vehicles' energy consumption. And the Group is also working to reduce the carbon footprint of its range of thermal systems, by optimizing their design and using innovative materials. Valeo's solutions combine performance, lightness and energy efficiency to create electric vehicles that emit less carbon.

"THE THERMAL SYSTEMS DEVELOPED BY VALEO OFFER SOLUTIONS TO PROTECT THE BATTERY BY HEATING OR COOLING THE CORE OF THE CELLS TO KEEP THEM AT THE RIGHT TEMPERATURE."

A COMPREHENSIVE RANGE OF THERMAL SYSTEMS

Valeo technologies increase vehicle travel range and comfort while reducing fuel consumption.



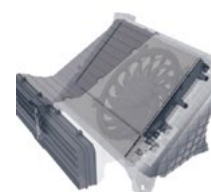
The **air conditioning system** is designed to minimize noise pollution. Pollution sensors and a high-efficiency filter work together to provide clean air.



A new smart heating technology, the **flex heater** consists of highly flexible radiant panels hidden under the cabin linings. This system works intelligently with the air conditioning unit, consuming 25% less electricity with four passengers on board, and 50% less when the driver is alone.



In winter, the water/glycol **electric heating system** preheats the battery pack to enable rapid charging in cold weather.



This **front-end cooling module** is designed to manage airflow and optimize the vehicle's performance, particularly in terms of heat extraction during rapid charging. At the same time, its streamlined design maximizes aerodynamics.

In winter, the **air conditioning circuit** works like a heat pump, recovering calories from the ambient air and electric powertrain and transforming them into heating for the vehicle interior. In summer, it produces cold air for the cabin and extracts heat from the front end.



A comprehensive cooling system that keeps the battery at the ideal temperature, the **battery cooler** is a crucial part. Its modular design makes it suitable for all types of electric vehicles.



Meanwhile, the **battery tray** acts as an incubator, keeping the battery at an ideal temperature and protecting it from side impacts and crashes. Its ultra-light, composite material reduces the vehicle's weight and increases its travel range, all with a smaller carbon footprint than aluminum.

A COMMITMENT

SPANNING THE ENTIRE
VALUE CHAIN



Valeo takes action across its entire value chain, transforming and innovating to significantly reduce its carbon emissions on all scopes. **Let's take a closer look at seven major initiatives rolled out around the world.**

DETAILED KNOWLEDGE OF THE CARBON FOOTPRINT AT EVERY STAGE OF THE VALUE CHAIN

Contributing to carbon neutrality through 2050, which Valeo is committed to, involves managing greenhouse gas emissions across the entire value chain.

The Group's direct activities at the plants where products and systems are produced represent only a fraction of its carbon footprint. Starting from the extraction of raw materials to the end use of onboard technologies, every step is monitored and optimized. This is why Valeo maintains close working relationships with its customers and suppliers, with the aim of designing technologies whose carbon footprint is contained across their entire life cycle and reducing carbon emissions across the Valeo Group.

Greenhouse gas emissions are divided into three main categories:



Includes greenhouse gas emissions generated before the production phase: extraction and processing of raw materials, production by suppliers, transportation to Valeo plants and logistics.



Correspond to all direct and indirect greenhouse gas emissions linked to production: lighting and heating of sites, energy consumption. This applies to all Group sites: plants, R&D centers, distribution platforms and headquarters.



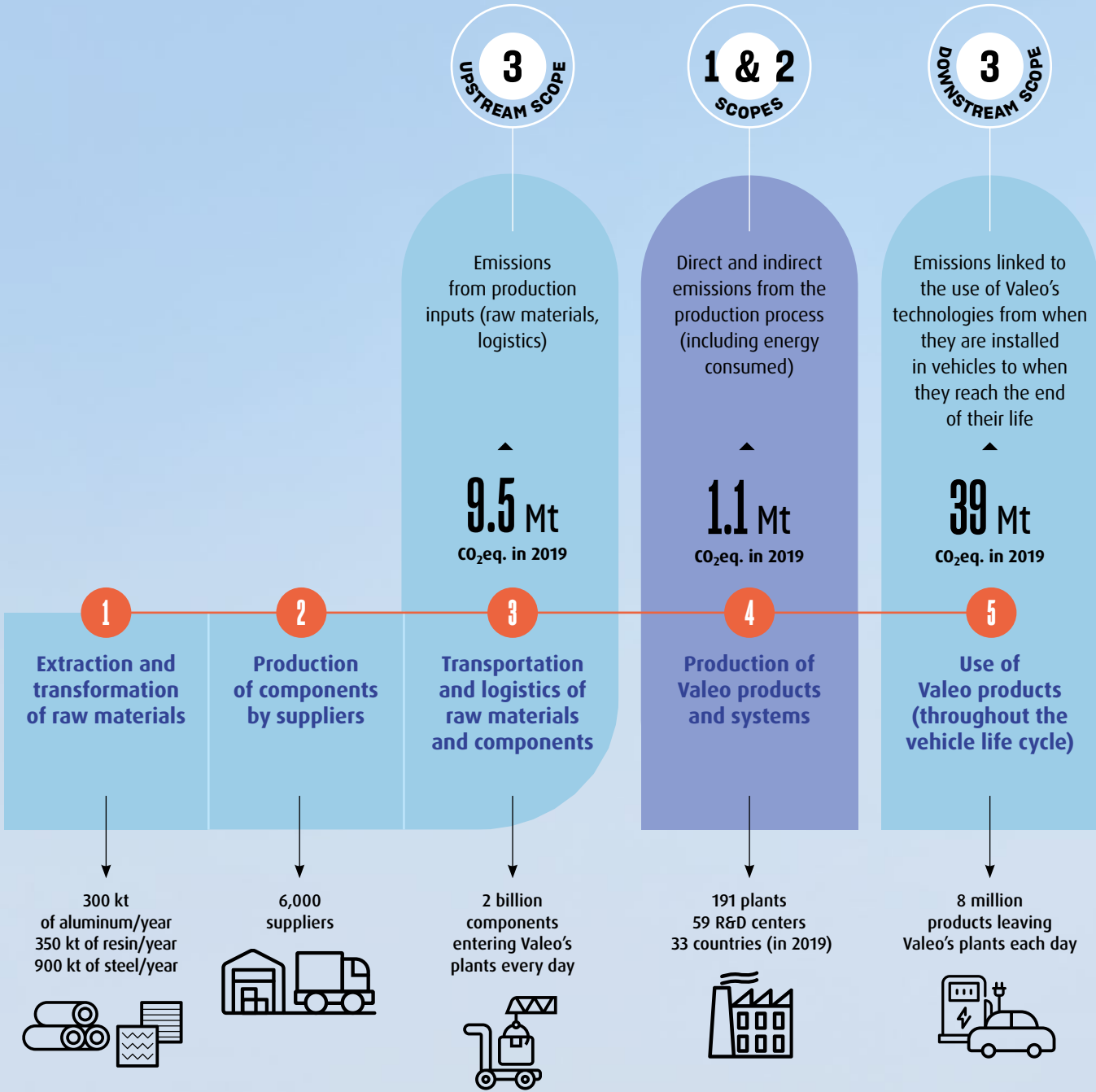
Takes into account all greenhouse gas emissions linked to the use of Valeo's technologies from when they are installed in vehicles to when they reach the end of their life.

A NEW STEP ON THE JOURNEY TO DECARBONIZATION

- At Valeo, the reduction of CO₂ emissions has been central to its strategy since 2009, and sales generated from technologies that help to reduce CO₂ emissions have grown 20-fold.
- Over the past ten years, energy consumption at the Group's sites, as a proportion of sales, has decreased by 20%. This is the result of ongoing optimization efforts including management of technical efficiency, heat recovery and improvement of machine performance.
- With its CAP 50 plan, the Group is accelerating in this area, both at its sites and across its value chain.

OVERVIEW OF VALEO'S CARBON FOOTPRINT

The Group has set itself the target of reducing its emissions from 49.6 million to 27.8 million metric tons of CO₂ equivalent between 2019 and 2030. That includes gains made possible by Valeo technologies.



ACTION 1

SIGNIFICANTLY REDUCING THE CARBON FOOTPRINT OF ITS PLANTS

By 2030, Valeo will have allocated more than 400 million euros to reducing emissions relating to its operating activities (Scopes 1 and 2). These investments will be used to upgrade the Group's sites to enable the current 100 most carbon-intensive facilities to become high-energy efficiency sites by 2030.

For a Group which has nearly 200 plants in 31 countries, contributing to carbon neutrality requires a major transformation. This initiative, which began in 2008, has led to ISO 50001* certification for nearly one-third of Valeo's sites where local energy management systems have been deployed. Looking ahead, Valeo aims to have 67 sites certified by 2025 and 100 by 2030. In parallel, the Group has also improved the energy performance of its buildings, by switching to LED lighting, heating with heat recovery systems, and installing thermal insulation.

Examples of concrete actions taken to reduce emissions include: At the Bursa site (Turkey), the hydraulic system was automated in 2021, allowing 685 metric tons of CO₂ equivalent emissions to be avoided each year. In Shenyang (China), compressor use was optimized in 2021, allowing 935 metric tons of CO₂ equivalent emissions to be avoided per year. These upgrades go hand in hand with work on improving the energy performance of production facilities.

75%
**REDUCTION
TARGET
FOR SCOPES 1 AND 2
BY 2030.**

Since 2019, the furnaces at the Jingzhou site in China have been equipped with a heat recovery unit. This investment of several thousand euros generates annual savings of 428 metric tons of CO₂ equivalent. In addition, the air conditioning system was replaced. Given Jingzhou's hot climate, this upgrade has generated significant savings, with 1,955 metric tons of CO₂ equivalent avoided each year.



In 2019, all Valeo plants combined generated 1.1 MtCO₂eq. This represents a small portion of the Group's overall carbon footprint, which it is nevertheless working to reduce. The aim is to bring the figure down to 0.28 MtCO₂eq. by 2030, representing a 75% reduction in under 11 years.

In France, the Issoire site obtained ISO 50001 certification in 2014. Since then, the site has reduced its consumption by more than 5,000 MWh per year. Intelligent heat recovery systems have been installed: rather than losing the energy released by refrigeration systems and compressors, it is recovered and reused in the building's heating network. These new systems have delivered tangible results: in 2013, 17% of the site's energy consumption was devoted to heating the building, and this has now been reduced to 7%.



ACTION 2

PRIORITIZING CARBON-FREE ENERGY*

In addition to tackling the challenges posed by the constant rise in fossil fuel prices, shifting the energy mix to lower carbon resources is one of the Group's levers for reducing its carbon footprint.

To reduce the carbon footprint of its plants, thereby also reducing its direct and indirect emissions, Valeo has chosen a regional approach. The Group is focusing its efforts on regions where the energy mix is highly carbon intensive, such as Asia, where the most significant measures will be taken. Other actions will also be implemented in European countries with the most carbon-intensive energy mixes.

To reduce its indirect emissions, Valeo is focusing on three actions. Firstly, it plans to considerably increase the share of low-carbon energy purchased to power its sites, from 5% today to 80% in 2030. Secondly, Valeo is working to produce carbon-free energy directly at its sites. Lastly, the Group is reducing its sites' use of gas, fuel oil and other fossil fuels, in all their forms. For example, combustion-engine lifting equipment is gradually being replaced by electric machines.



€400M

ALLOCATED BETWEEN
NOW AND 2030

TO ACHIEVE THE OBJECTIVE OF
REDUCING SCOPES 1 AND 2 EMISSIONS
BY 75% AT SOME 200 VALEO SITES.



▲
The pilot sites in **Sanand (India)** and **Bad Rodach (Germany)** have committed to reducing indirect emissions. These two sites use their own solar energy facilities to produce 30% and 20% of the energy they consume, respectively. In Bad Rodach, 892 metric tons of CO₂ equivalent are avoided each year, compared with a site without a self-generated solar energy supply.

The **Chennai (India)** pilot site has also pledged to reduce its indirect emissions. It has the largest green energy purchase agreement in the Group, with 90% of the electricity it purchases coming from wind power.



90%

OF THE ELECTRICITY
PURCHASED IN CHENNAI
(INDIA) COMES
FROM WIND POWER.

* See glossary, pages 71-72.

ACTION 3

INVOLVING
SUPPLIERS

From the extraction and transformation of raw materials and the production of components, to transportation, Valeo plants, and logistics, all of these essential activities emit greenhouse gases. The Group has committed to reducing emissions relating to its supply chain by 15% by 2030.

To achieve a less carbon-intensive production chain, Valeo works closely with nearly 6,000 suppliers. As early as 2012, the Group began assessing its suppliers' maturity in terms of sustainability. This assessment is carried out every year through evaluations and physical audits at supplier premises, in order to accurately determine their emissions reduction trajectory. With its CAP 50 plan, Valeo is strengthening its supplier assessment tools by including criteria relating to energy performance and CO₂ emissions monitoring.

Contractual clauses have also been revised and now include performance requirements relating to reducing the carbon footprint. At the same time, Valeo helps its suppliers take corrective action at the source, for example by changing energy suppliers, upgrading industrial facilities or improving the logistics network. In 2022, Valeo formed a partnership with CDP, using the CDP Supply Chain assessment to measure its suppliers' carbon performance. The program targets suppliers representing 80% of annual manufacturing spend and will be repeated each year.

ASSESS AND SUPPORT SUPPLIERS

GREENHOUSE GAS
EMISSIONS
NOT MEASURED

0

GREENHOUSE GAS
EMISSIONS
MEASURED ACROSS
THE 3 SCOPES
AND RESULTS
REPORTED
TO VALEO

1

RESULTS IN LINE
WITH VALEO'S
OBJECTIVES

2

RESULTS IN LINE
WITH VALEO'S
OBJECTIVES AND
DISCLOSED PUBLICLY

3

To help its suppliers improve their carbon maturity, Valeo sets deadlines and objectives depending on their level of maturity. Valeo has established four maturity levels (from 0 to 3). By 2025, all suppliers will be required to reach level 3.



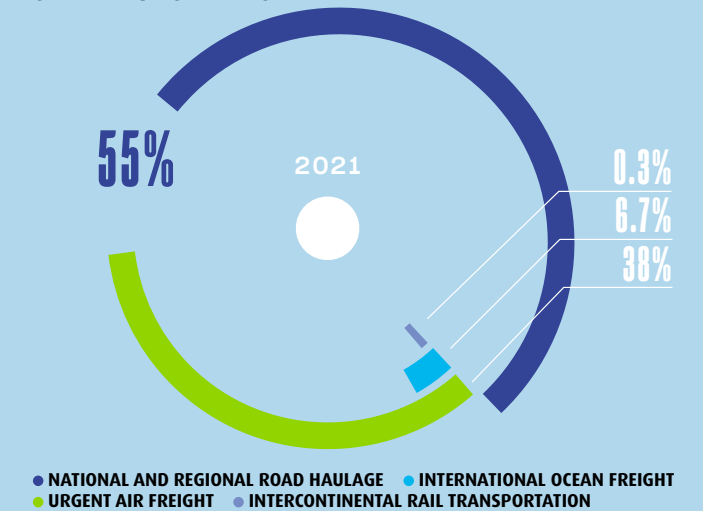
ACTION 4

REDUCING EMISSIONS
IN ITS SUPPLY CHAIN

The transportation of goods from its sites, as well as their storage, also contributes to the Group's greenhouse gas emissions. In 2019, this carbon footprint represented about half of emissions from its sites. Valeo is committed to reducing this impact.

CO₂ emissions from transporting goods depend on the modes of transportation used, but also on storage and packaging. Today, Valeo mainly uses road haulage for continental deliveries, which is in line with the push to regionalize the automotive industry, by encouraging automakers to work with suppliers located in the same region. Intercontinental transportation is carried out by ocean freight, and air freight is limited. Historically, rail has not been a viable solution for daily transportation needs, but does remain an option for the future.

The Group is taking a number of steps to reduce supply chain emissions. These include optimizing the fill rate of transportation units by consolidating shipments between plants and improving the stackability of packaging. Valeo's next objective is to improve the efficiency of its packaging in terms of CO₂, by using recyclable packaging, and gradually prioritizing low-carbon modes of transportation such as piggybacking, a system that combines road and rail. Valeo also aims to reduce the carbon footprint relating to returning empty packaging.

BREAKDOWN OF CO₂ EMISSIONS BY MEANS
OF TRANSPORTATION

ACTION 5

ECO-DESIGNING* PRODUCTS

Reducing the CO₂ emissions of its products is a priority for Valeo. Doing so will play a key role in achieving the 2030 carbon objectives.

Valeo uses a variety of methods to reduce the carbon impact of its products, including strengthening parts and making them as robust as possible, using recycled materials that emit less carbon and alternative materials to reduce the weight of components, and factoring in product remanufacturing and repair capacity right from the design phase. Using recycled materials in new products is another key driver, reducing the carbon impact linked to the extraction and processing of raw materials. Valeo also strives right from the design phase to use alternative materials that emit less CO₂, and to use less material full stop. In addition to reducing upstream Scope 3 emissions, this results in weight savings, which helps to increase the range of electric vehicles.

FACTORING REPAIRABILITY INTO THE DESIGN PHASE.

In addition to natural wear and tear, products can break on impact or as a result of misuse. These normal hazards of automobile use have been addressed in Valeo's innovative "Design for Repair" process, whereby a technology product's repairability is factored in right from the design phase. Take the example of vehicle headlamps – often the first part to be damaged during a collision. Valeo has developed an innovative "mechanical fuse" system that works in the same way as an electric fuse. A part located on the rear of the optical unit retracts on impact, pulling the headlamp back into the bodywork to stop it from shattering so that the only thing that needs to be replaced is the fuse.



Use of recycled materials in new and remanufactured products. The Group reuses 96% of copper, 100% of aluminum and 87% of steel, representing 92% of reused materials overall. In terms of plastic parts, Valeo already incorporates 10% to 20% recycled polymers. The goal for 2024 is to be able to supply parts made of 100% recycled polypropylene.

Rare earth elements: two measures to reduce emissions.

With the electrification and digitalization of industry, the need for rare earth elements is increasing massively. However, extracting these materials is highly carbon intensive.

- Valeo is therefore working to reduce the use of rare earths, as demonstrated with its partnership with Renault to develop a motor that is made without these elements.
- In addition, Valeo is working with French and European players to set up a recycling circuit for these materials. For several years, the Group has been working with the French Alternative Energies and Atomic Energy Commission (CEA) to validate a process for manufacturing magnets from recycled rare earth elements (using magnets that have been recovered and ground down to powder form), under the framework of the European LowReeMotors project since 2021. Going forward, Valeo now wants to create a complete circular economy for rare earth elements, which is why it contributes to the Magnolia project launched in 2022 alongside the CEA, Orano and Paprec.

ACTION 6

DEVELOPING TECHNOLOGIES FOR LOW-CARBON MOBILITY

Valeo's technologies are sold to automakers and then fitted on vehicles that are used for several years, but they also generate CO₂ emissions during this stage of their life cycle.

45%

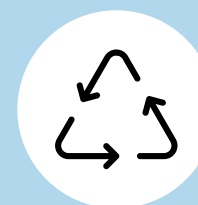
**OF THE GROUP'S ORDER
INTAKE IN 2021**

**WAS FOR TECHNOLOGIES THAT DID
NOT EXIST THREE YEARS AGO.**

Emissions relating to the end use of Valeo's products, which are used throughout the vehicle life cycle, represent the majority of the Group's carbon impact. For this reason, the Group has pledged to make its solutions greener and is aiming to halve emissions in this area by 2030, to contribute to carbon neutrality through 2050. Demonstrating its commitment to this goal, it has invested more than 10 billion euros in electrification over the past ten years.

Another way in which Valeo aims to reduce emissions relating to the end use of its products is by developing more efficient technologies. For example, if systems and products are lighter, then less energy is required for vehicles to move around, which ultimately results in lower CO₂ emissions. By 2030, given the trend toward vehicle electrification, Valeo's technologies will help avoid nearly 14 million metric tons of CO₂ equivalent emissions per year compared with 2019 levels, the equivalent to two and a half years of emissions from the city of Paris.

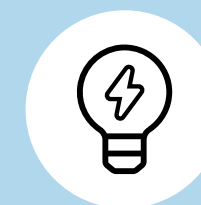
ACROSS ALL ITS PLATFORMS, VALEO FOCUSES ITS EFFORTS ON WELL-DEFINED PRIORITIES



USING RECYCLED
MATERIALS



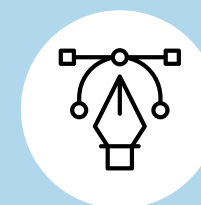
REDUCING
PRODUCT WEIGHT



OPTIMIZING
THE ENERGY
EFFICIENCY OF ITS
TECHNOLOGIES



EXTENDING
THE USEFUL LIFE
OF PRODUCTS



FACTORING
IN RECYCLING
AND REUSE FROM
THE DESIGN PHASE

ACTION 7

TRANSFORMING THE VALUE CHAIN THROUGH THE CIRCULAR ECONOMY

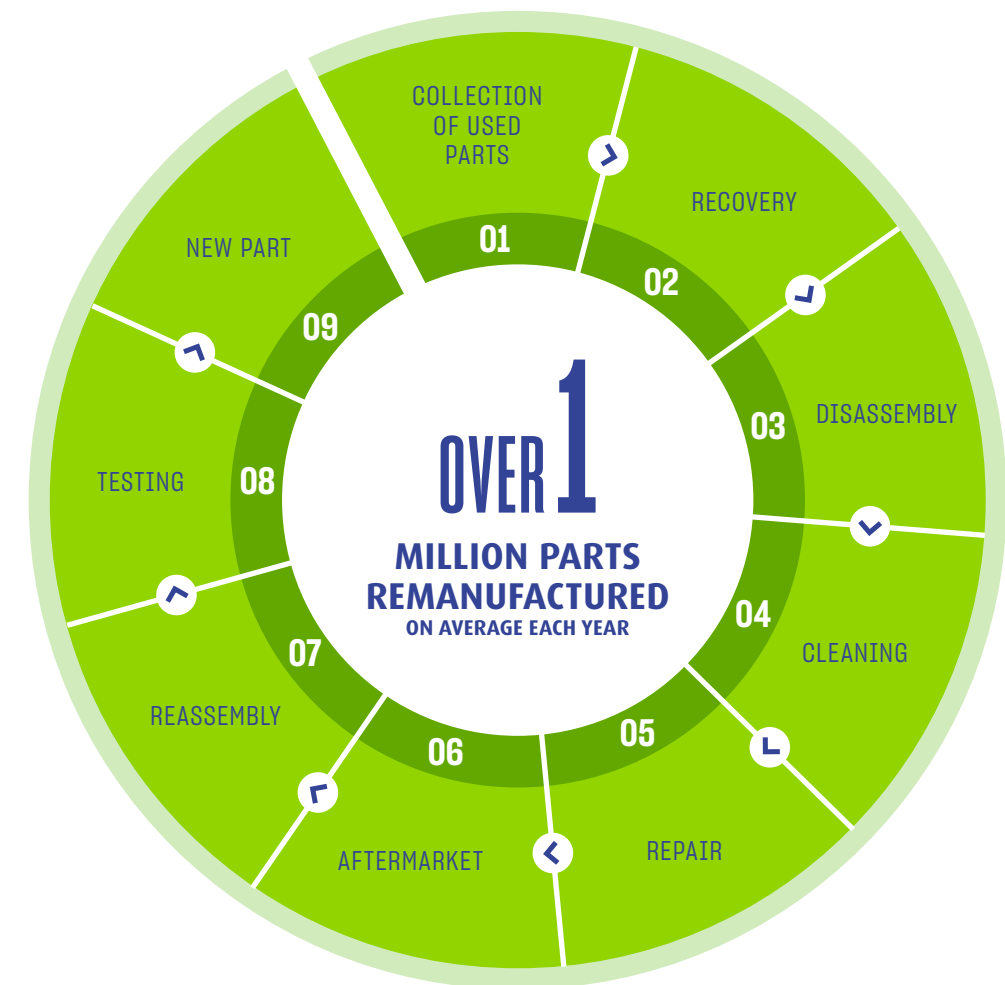
Recycling, reusing and remanufacturing used products and materials is a great way to help reduce the Group's CO₂ emissions and contribute to the circular economy, which is a major driver of research and innovation for Valeo.

Valeo has already put in place measures to promote the circular economy. **First, materials are recycled during the production process.** Valeo pays particular attention to plastic here. The Group has developed partnerships with suppliers that produce pellets from material recovered at its own sites. Several plants have already adopted this process, with scrap recovery rates of up to 50%. For example, waste is sorted after the production of headlamps and turn signals for reuse in opaque-colored components. Recycled materials that cannot be reused for lighting applications are sold to other industries.

Second, damaged or worn-out products are given a second life. Valeo is a recognized player in the remanufacturing of end-of-life automotive parts, both for its own products and for those of its competitors. In particular, Valeo remanufactures alternators, starters, compressors, dual mass flywheels and dual-clutch transmissions at its Czechowice site in Poland, and has several initiatives underway to expand the product line.

VALEO, A MAJOR PLAYER IN REMANUFACTURING FOR 40 YEARS

The Group collects used products, dismantles them and remanufactures them, thereby saving energy and reducing the use of raw materials. The supply of remanufactured products is driven by regulations that increasingly promote giving a second life to used products. This activity draws on a comprehensive collection, manufacturing and distribution chain.



European automotive suppliers are committed to recycling plastic.

As part of CLEPA*, Valeo is a member of the Circular Plastics Alliance, established by the European Commission in 2018, which unites public and private stakeholders from plastics value chains around a common objective: promoting voluntary initiatives and commitments in the area of recycling.

"THE CIRCULAR ECONOMY IS ABOUT GIVING PRODUCTS A SECOND LIFE

and increasing their useful life. We are actively involved in the remanufacturing market, with an efficient process in place to collect such used parts as alternators, starters, clutches and air conditioning compressors."

CHRISTOPHE PÉRILLAT

CHIEF EXECUTIVE OFFICER OF VALEO



Remanufacturing and circular economy

As part of its remanufacturing activities, Valeo collects a range of used parts from independent automotive repair players in Europe with a view to giving them a new life. These parts go through a full industrial remanufacturing process (see above) that gives them the same levels of quality and performance as new parts.

Valeo, a partner to Renault's Re-Factory in Flins

In 2021, Renault's Flins site was converted into a circular economy innovation center. Valeo is contributing its circular economy expertise (materials, remanufacturing, carbon footprint measurement, etc.) to the project.

* See glossary, pages 71-72.

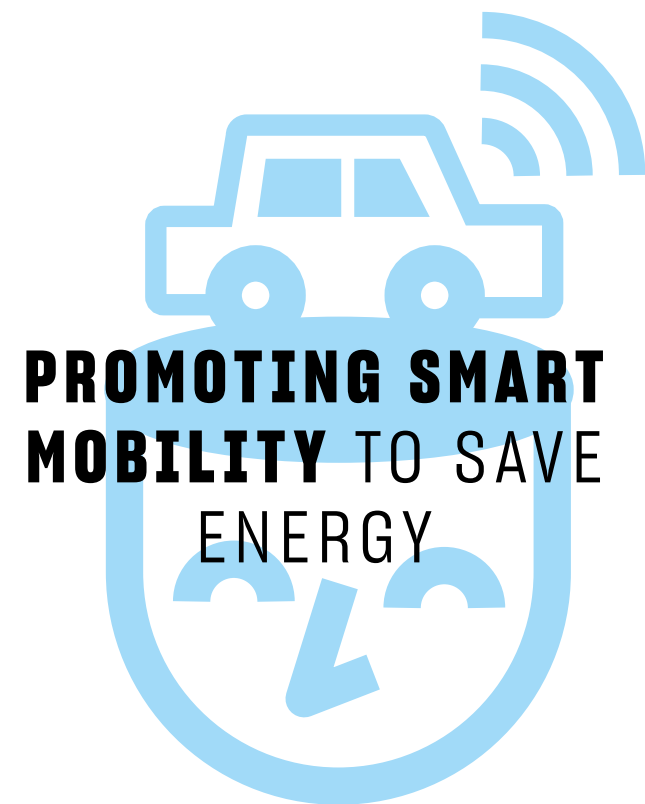
HAND IN HAND

WITH OTHER
STAKEHOLDERS



Low-carbon mobility is a major objective for Valeo, which has adopted a partnership approach to move forward more quickly with all of its stakeholders.

04



CHALLENGE NO. 1

WHAT'S AT STAKE

In the future, vehicles and infrastructure will be able to communicate with each other to make mobility smoother and cleaner. That means not only making each vehicle smarter, but also improving the overall intelligence of the mobility system and infrastructure.

VALEO'S RESPONSE

Smart vehicles for decarbonization. Valeo has developed a Predictive Cruise Control system that automatically adapts distances and driving profiles to traffic conditions. Thanks to this innovation, fuel consumption can be modified to minimize CO₂ emissions.

Another of Valeo's solutions is Eco Traffic Management and Control, which creates a direct link between GPS traffic data and battery management. Using the data provided, the battery adapts its consumption to reduce CO₂ emissions.

CONTRIBUTING TO THE EUROPEAN AMBITION

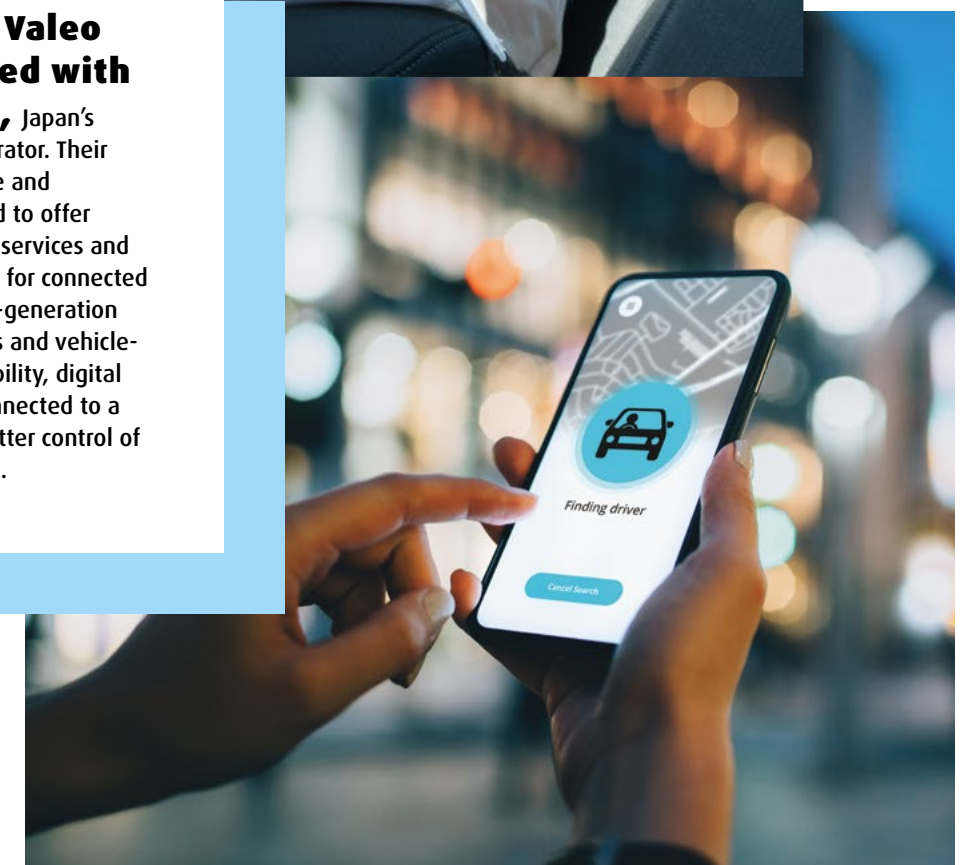
The European Commission has rolled out the Cooperative Intelligent Transport Systems (C-ITS) strategy, which aims to increase vehicle-to-

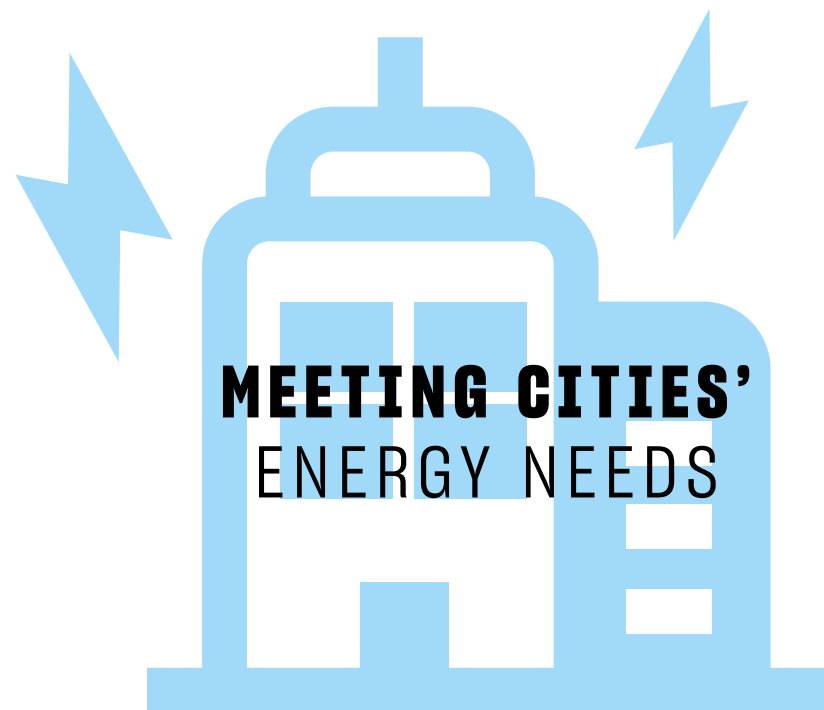
vehicle and vehicle-to-infrastructure communication. Valeo's solutions play a key part in this goal. As well as promising better safety, easier

traffic management and improved comfort, the technologies underpinning the strategy also offer substantial energy savings.



Since 2018, Valeo has partnered with NTT Docomo, Japan's leading mobile operator. Their respective expertise and solutions are pooled to offer telecommunication services and onboard equipment for connected cars, including next-generation 5G mobility services and vehicle-to-everything capability, digital services for cars connected to a smartphone and better control of onboard equipment.





MEETING CITIES' ENERGY NEEDS

CHALLENGE NO. 2

WHAT'S AT STAKE

Today, cities face the challenge of having to strike a balance between electricity supply and production, and having to provide for the countless sources of energy consumption. To meet these challenges, they are seeking to use more renewable energy. This requires overcoming intermittency and managing spikes in consumption.

x2

GLOBAL ELECTRICITY CONSUMPTION, EXCLUDING INDUSTRY, IS SET TO DOUBLE BY 2050, ACCORDING TO THE US ENERGY INFORMATION ADMINISTRATION.

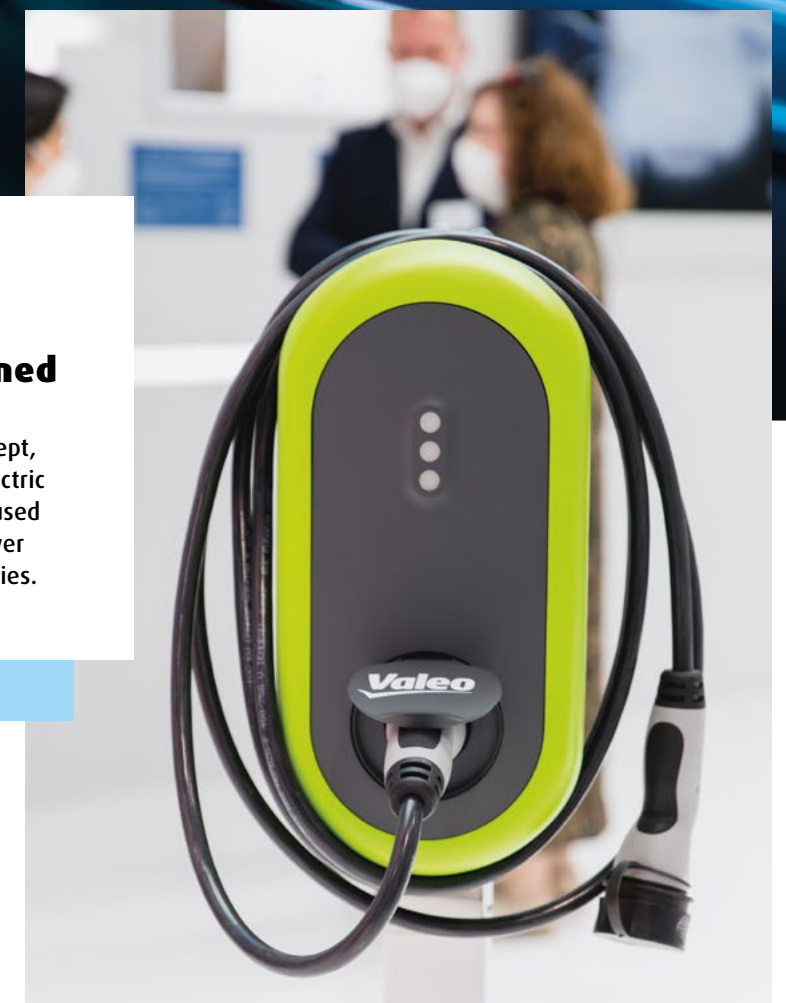
VALEO'S RESPONSE

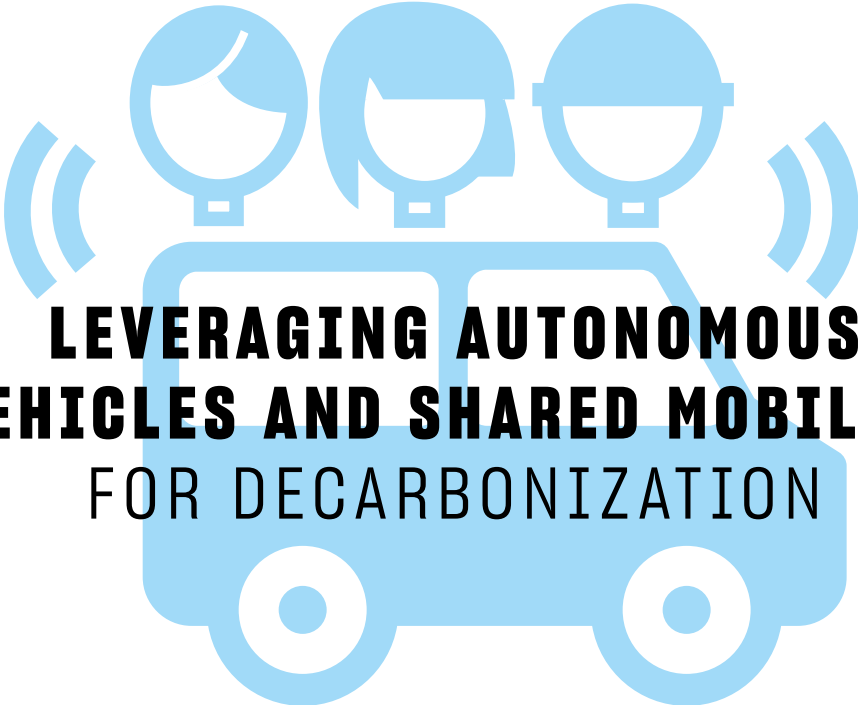
One solution to this challenge is the vehicle-to-grid concept, which offers a means of managing intermittency and smoothing out electricity consumption. It is based on the principle that future charging stations and vehicles will be "bidirectional", meaning that electricity will be able to flow not just from the charging station to the car, but also in the other direction. Flows from the vehicle will be fed into the electricity grid, thereby helping address local imbalances between supply and demand.

This will make cars an integral part of the energy networks in tomorrow's cities. Valeo is at the forefront of research in this area, and is working to integrate the bidirectional function into the onboard charger – the key technology for the vehicle-to-grid system. Valeo's charging stations also offer smart energy management features. For example, they can charge when electricity is cheapest or when it comes from a green source, such as solar or wind power facilities.



EDF, Izivia, IRT SystemX and Valeo have joined forces to evaluate the vehicle-to-grid concept, a new dimension for electric vehicles, which will be used to store energy and power for electricity grids in cities.





LEVERAGING AUTONOMOUS VEHICLES AND SHARED MOBILITY FOR DECARBONIZATION

CHALLENGE NO. 3

WHAT'S AT STAKE

Demand for mobility will continue to grow in line with increasing urbanization. The challenge is to meet these needs while reducing the carbon impact of mobility, notably by combining different modes of individual and shared mobility.

NEARLY
2 MILLION
DRIVERLESS TAXIS AND AUTONOMOUS SHUTTLES
WILL BE IN SERVICE BY 2035.

Source: Frost & Sullivan (2022).

VALEO'S RESPONSE

Autonomous vehicles as a means of reducing carbon emissions. Shared mobility studies conducted by the Organisation for Economic Co-operation and Development (OECD) International Transport Forum (ITF)* since 2015 show that the use of driverless taxis and autonomous shuttles, in addition to public transportation, could reduce CO₂ emissions from urban mobility by up to 50% compared with current configurations⁽¹⁾.

The rollout will come with increasing technology content per vehicle, as safety and performance requirements are higher for these new autonomous vehicles. This represents an opportunity for Valeo to grow its sales of cameras, LiDARs and software associated with level 4 autonomous driving.



Since 2016, Valeo has been working with Navya, the French leader in the supply of autonomous driving systems and associated services.

Its Autonom® Shuttle Evo, which already operates in 23 countries, is equipped with Valeo technologies. The two companies are stepping up their efforts to develop level 4 autonomous driving systems which will be marketable by 2025.



* See glossary, pages 71-72.
(1) ITF (2020), "Shared Mobility Simulations for Lyon".



DECARBONIZING LAST-MILE DELIVERY

CHALLENGE NO. 4

WHAT'S AT STAKE

E-commerce is growing at a rapid pace. Each year, tens of billions of parcels have to be delivered. However, the “last mile” often involves vans – some electric, others not. According to a World Economic Forum study⁽¹⁾, this growth will result in 32% more greenhouse gas emissions and 21% more traffic jams by 2030. A McKinsey study in Japan⁽²⁾ shows that automating delivery vehicles could reduce CO₂ emissions by up to 12%. The use of urban droids for last-mile delivery services has accelerated with the Covid-19 crisis.

36%

IN THE WORLD'S
100 BIGGEST CITIES,
THE NUMBER OF DELIVERY VEHICLES
IS SET TO INCREASE BY 36% BY 2030,
ACCORDING TO A WORLD ECONOMIC
FORUM STUDY⁽¹⁾.

VALEO'S RESPONSE

Urban logistics stakeholders need to get as close as they can to consumers, while being able to transport volumes of up to 1 cu.m. Valeo is working to offer them suitable products, making the best use of its technologies. This can be seen in its 48V electric motor, which was developed for electric delivery vehicles.

In China, the Group has entered into a strategic cooperation agreement with Meituan, the country's leading on-demand food delivery platform. Together, they are designing autonomous vehicles for last-mile delivery. The vehicle is powered by an all-electric 48V system, and can find its way all by itself thanks to its Valeo perception systems.



Meituan offers meal delivery and other services in more than 2,800 cities and districts in China. The company sees the autonomous droid developed by Valeo as an opportunity to test new delivery systems and organizations. More broadly, the new vehicle opens up the possibility of rethinking the urban space – how much space to set aside for deliveries or how to design storage facilities – by reducing the amount of space taken up by this type of transportation.



⁽¹⁾ http://www3.weforum.org/docs/WEF_Future-of-the-last-mile-ecosystem.pdf.

⁽²⁾ <http://www.mckinsey.com/industries/travel-logistics-and-infrastructure/our-insights/efficient-and-sustainable-last-mile-logistics-lessons-from-japan>.

AT THE HEART OF RESEARCH ECOSYSTEMS

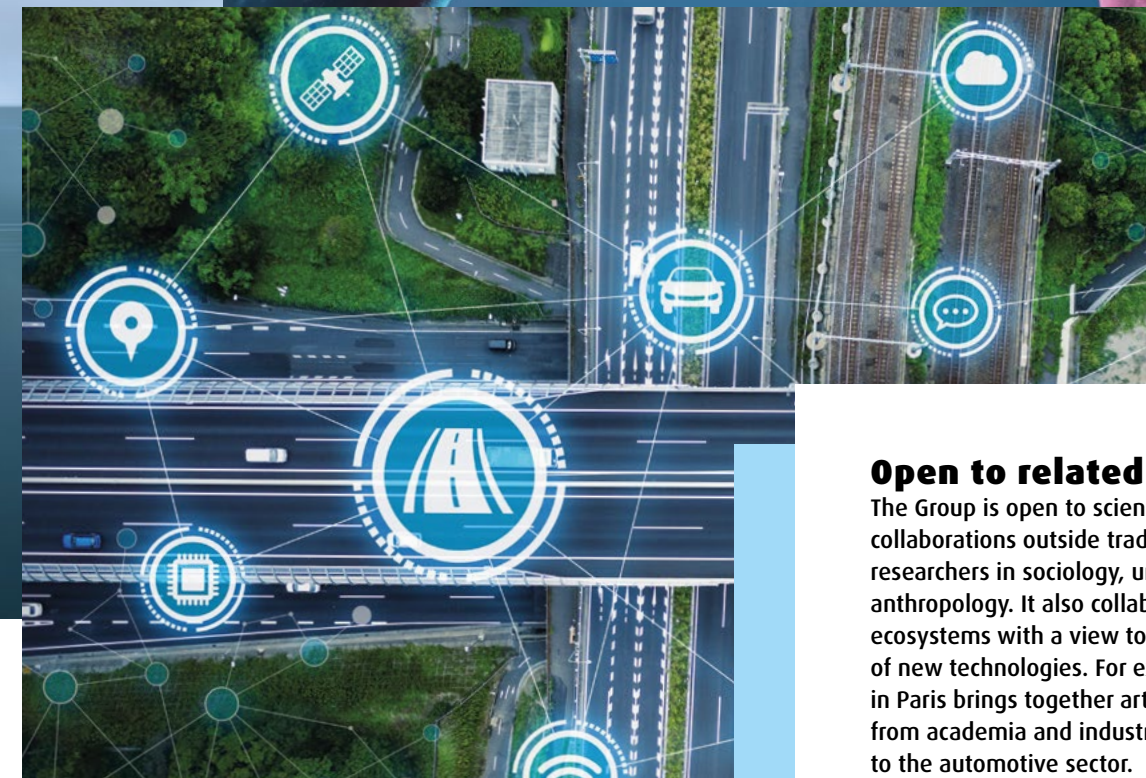
There is no single model for rolling out electrification, in terms of the strategies adopted by different governments and in terms of technology. This means that Valeo needs to remain closely connected with all ecosystems. With this in mind, the Group participates in the main national and European platforms dedicated to the electrification of mobility. The Valeo Group has also forged strong research partnerships.

A proactive contributor to European initiatives.

Valeo takes part in the European Commission's flagship initiatives, including the Batteries European Partnership Association (BEPA) and the partnership for the development of electric and zero-carbon vehicles (2Zero), which covers new generations of thermal management systems for electric vehicles. It is also a stakeholder in the European sovereignty support projects for electric vehicle power electronics (Important Projects of Common European Interest - IPCEI) that are currently being set up.



Membership of industry platforms. Since 2008, Valeo has co-chaired the European Road Transport Research Advisory Council (ERTRAC) alongside German automaker BMW*. Dedicated to collaborative research in the automotive industry, this official European Commission technological platform is responsible for directing and coordinating research policy in the area of land transportation, excluding rail. Governed by industry leaders, its main goal is to guide transportation stakeholders to sustainable, eco-friendly and connected solutions based on research roadmaps.



Open to related fields of research.

The Group is open to scientific and academic collaborations outside traditional engineering, with researchers in sociology, urban planning and anthropology. It also collaborates with various start-up ecosystems with a view to promoting the rapid rollout of new technologies. For example, the Valeo AI Center in Paris brings together artificial intelligence researchers from academia and industry to find solutions applicable to the automotive sector.

EXPERT GUIDE



The Expert Guide provides details to ensure the transparency of Valeo's approach **to explaining the resilience of its business model and its carbon plan**, in line with Task Force on Climate-Related Financial Disclosures (TCFD) recommendations.

A WIDELY RECOGNIZED COMMITMENT TO TRANSPARENCY

Valeo has seen its non-financial performance acknowledged by the main rating agencies in this area, reflecting the successful cross-functional deployment of sustainable development efforts and related communications that respect the principles of transparency, discipline and relevance. This recognition was first obtained in 2021 and has been renewed several times since.

ORGANIZATION	RATING
CDP	A-
CDP SER (Supplier Engagement Survey)	A
MSCI	AAA, Industry leader, ranked No. 1 among automotive suppliers
ISS-oekom	B+, prime, Industry leader, ranked No. 1 among automotive suppliers, excluding tire manufacturers
S&P Global	72/100, ranked No. 1 among automotive suppliers, excluding tire manufacturers
Sustainalytics	10.7 Low Risk, ESG Industry Top Rated
Corporate Knights	Ranked No. 1 in the automotive sector (automotive suppliers and automakers)

In 2021, Valeo maintained its position as one of the highest rated automotive suppliers by non-financial rating agencies MSCI (AAA), CDP (A-) and Sustainalytics (Low Risk), and S&P Global (score of 72/100).

Valeo also features in several non-financial indices, including CAC40 ESG, DJSI (Dow Jones Sustainability Index) World and Europe, Euronext Vigeo Europe 120, Euronext Vigeo Eurozone 120, FTSE4Good Index Series, MSCI ESG Leaders Index Series, Solactive Europe Corporate Social Responsibility Index, STOXX® Global ESG Leaders.

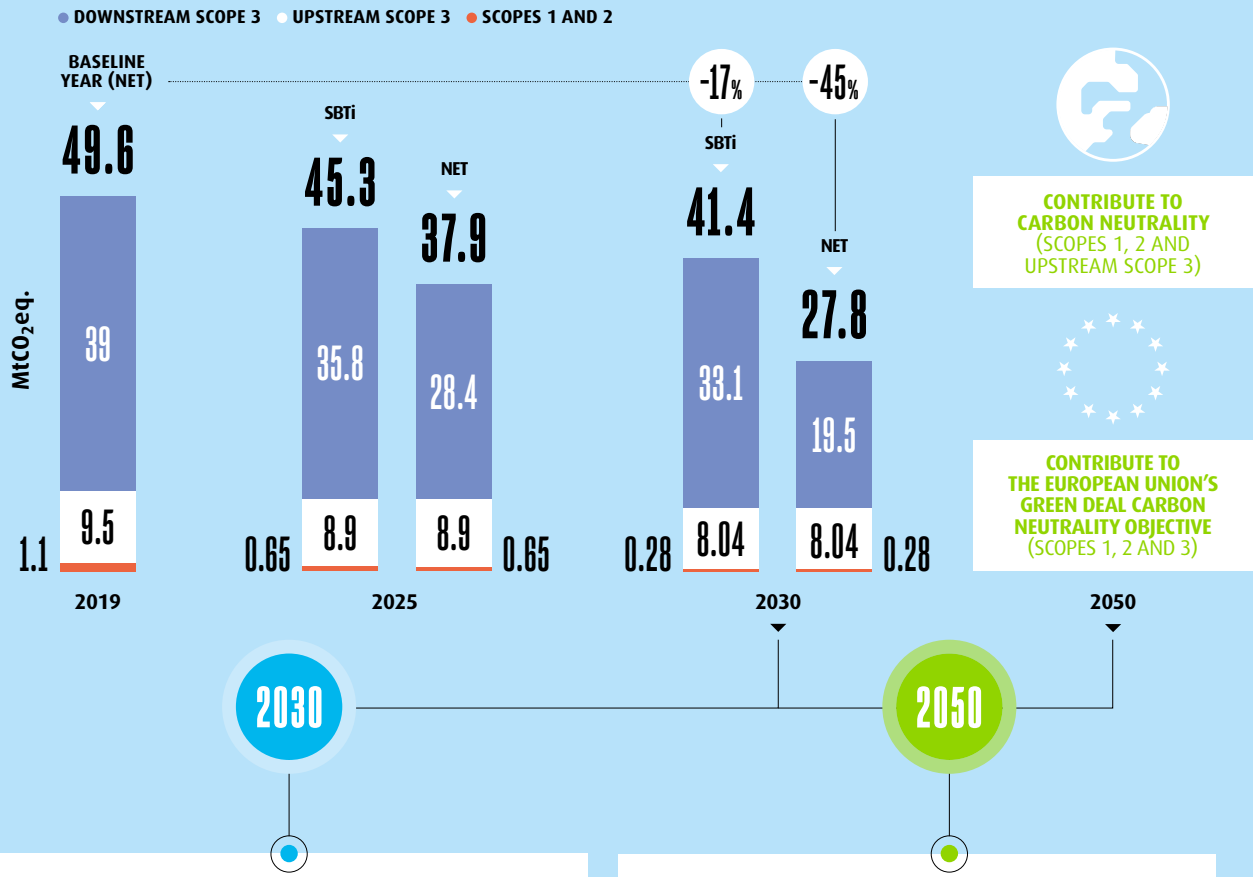
GOVERNANCE AND CLIMATE

Valeo's Board of Directors is fully committed to the governance of the CAP 50 plan, whose implementation is overseen by the Governance, Appointments & Corporate Social Responsibility Committee. The Audit and Risks Committee also closely monitors the topic, going beyond the CAP 50 plan to work on risk analysis as recommended by the TCFD.



CAP 50 PLAN TARGETS

The CAP 50 plan aims to contribute to carbon neutrality by 2050 across the entire Valeo value chain. To manage its progress toward this ambitious objective, the Group has set an intermediate stage for 2030, with two reduction targets, one in line with the recommendations of the SBTi (known as the SBTi target), and the other specific to its corporate commitment (known as the NET target).



- **Scopes 1 and 2:** emissions from operating activities (plants, manufacturing processes and energy supply) will be reduced from 1.1 million to 0.28 million metric tons of CO₂ equivalent.
75% REDUCTION TARGET
- **Upstream Scope 3:** emissions from the supply chain will decrease from 9.5 million to 8.04 million metric tons of CO₂ equivalent.
15% REDUCTION TARGET
- **Downstream Scope 3:**
 - ▶ emissions relating to the end use of technologies sold by the Group will decrease from 39 million to 33.1 million metric tons of CO₂ equivalent.
15% REDUCTION TARGET (SBTi)
 - ▶ emissions will decrease from 39 to 19.5 million tons of CO₂ equivalent thanks to the electrification and CO₂ emission reduction technologies developed by Valeo.
50% REDUCTION TARGET (NET)

Through 2050, Valeo is committed to contributing to carbon neutrality worldwide (Scopes 1, 2 and upstream Scope 3) and to the European Union's Green Deal carbon neutrality objective (Scopes 1, 2 and 3, including the end use of its products). These objectives are in line with the reductions necessary to limit global warming to 1.5°C. They are all the more demanding as they must be achieved at a time when Valeo's business is expected to grow.

CAP 50 plan progress will be tracked and reported to the public based on two objectives for 2030: the SBTi* target and the Valeo target to reflect its transformation goals.

* See glossary, pages 71-72.

CAP 50 PLAN TARGETS

A PLAN THAT FACTORS IN REGIONAL AND MARKET REALITIES

The CAP 50 plan incorporates CO₂ emissions reduction trajectories announced by various countries and regions worldwide, as well as the specific characteristics of the automotive industry, namely vehicle regulations and automakers' expectations.

Through its Green Deal, the European Union aims to be climate neutral by 2050. Governments have publicly pledged to decarbonize the energy industry and implement public policies to this end. At this stage, the Group then has a clear vision of the energy outlook in Europe, where renewable and low-carbon energy sources are set to ramp up. Thanks to this visibility, Valeo can commit to contribute to the 2050 objective of carbon neutrality on the three scopes for its European activities. There is still, however, a great deal of uncertainty about the 2050 ambitions of several large countries in Asia and the Americas.

Valeo is a major player in decarbonizing the mobility sector, and the automotive industry in particular. Nevertheless, this collective project requires all players in the value chain to get onboard, and is dependent on commitments made by other industries, such as materials (steel, aluminum, plastics and resins) and electronics. The transformation of the entire supply chain is a crucial component of climate action – and an integral part of the CAP 50 plan.



A PLAN IN LINE WITH TOP INTERNATIONAL STANDARDS

The 2030 goals of the CAP 50 plan have been set based on the SBTi CO₂ emissions reduction trajectories and benchmarks, in line with the reduction required to cap global warming at 1.5°C, and with the Paris Climate Agreement (COP 21).

The mobility scenarios developed by Valeo incorporate the European Commission's Green Deal ambitions (see the "Fit for 55" announcement of July 14, 2021), which are aligned with a 1.5°C trajectory. In addition, the Group has joined the "Business Ambition for 1.5°C" campaign that brings together companies committed to contributing to carbon neutrality.

It was important for Valeo to include the impact of electrification in its plan to contribute to carbon neutrality. This is because reducing emissions in the usage phase is central to the Group's eco-design projects and a response to customers' high expectations. Due to the complexity of intersectoral harmonization, current SBTi methodology does not allow for emissions avoided by sold products to be taken into account, but this does not call into question the relevance of the initiative. Valeo therefore submitted a CO₂ emissions reduction commitment to the SBTi that does not include the carbon benefits of the use of its technologies (downstream Scope 3).

1.5°C

TARGETED GLOBAL WARMING CAP

VALEO IS A SIGNATORY OF THE "BUSINESS AMBITION FOR 1.5°C" CAMPAIGN.

MOBILIZING THE WHOLE COMPANY

In November 2020, the Group's Board of Directors adopted the CAP 50 plan, which sets out a precise roadmap to contribute to carbon neutrality through 2050. But it can only be achieved if all employees are on board.

Sustainable development is embedded in the Valeo Group's DNA and we strive to meet the growing demand for transparency in this area. Our dedicated carbon plan, CAP 50, puts in place a disclosure system both within our ecosystem, bringing all our employees and partners onboard, and outside the company, as illustrated by this document, which follows TCFD recommendations. We have based our ambition to contribute to carbon neutrality on the SBTi framework. This body even approved our 2030 objectives in 2021, for all our emissions scopes. More broadly,

a transformation is taking place across our ecosystem, from our customers and suppliers to all other mobility stakeholders.

For several years now, Valeo has been involved in a partnership committed to tangible emissions reduction actions. Within its own ecosystem, the Group has volunteered to maintain its leadership role in the European Commission's institutional partnership on electrification. And in emerging countries such as India, Valeo has carried out studies and a collaborative project on very low-cost tricycle electrification.

"OUR CAP 50 PLAN STEERS OUR TRAJECTORY ACCORDING TO CHANGING ENVIRONMENTAL, SOCIAL AND SOCIETAL REQUIREMENTS."

The strength of our roadmap and the confidence in our ambitions will continue to mobilize Valeo employees around the world. But beyond that, we want our entire ecosystem to buy into this approach, from our suppliers to our customers, and from regulators to societal stakeholders. The CAP 50 plan to reduce our carbon footprint will be the cornerstone of our evolution, allowing us to adjust our trajectory and steer our efforts according to changing environmental requirements, without compromising on social and societal aspects.

Constructive dialogue with think-tanks rounds out this long-term project. Energy and mobility considerations, for example, have been boosted by Valeo's participation in the Secure Energy initiative in the United States, which aims to reduce dependence on fossil fuels. Valeo has submitted its carbon plan to external stakeholders, including European mobility and the environment NGOs. The importance we place on transparency is also reflected in our world-class non-financial performance, as evidenced by the Group's CDP, S&P Global, MSCI and Sustainalytics ratings.



JEAN-LUC DI PAOLA-GALLONI

VICE PRESIDENT, SUSTAINABLE DEVELOPMENT AND EXTERNAL AFFAIRS

CAP 50 GOVERNANCE

A CAP 50 governance system has been set up to ensure effective plan rollout at all levels of the Group.

STRATEGY COMMITTEE

This committee is the steering body for the CAP 50 plan, setting the main priorities and objectives. Since 2020, it has met quarterly with the President, Corporate Strategy and Research & Development, for an in-depth review of rollout plan progress.

R&D COMMITTEE

This committee brings together the R&D departments of Valeo's four Business Groups. Its purpose is to monitor progress in action plans to reduce the carbon footprint of products, from design to the use, through the eco-design strategy, weight reduction and other measures. It shares best practices and tools, such as life cycle assessments.

INDUSTRIAL COMMITTEE

This committee defines and steers action plans aimed at both controlling and reducing Scopes 1 and 2 greenhouse gas emissions, i.e., emissions relating to production activities including lighting, heating and site energy consumption.

MATERIALS COMMITTEE

This committee acts as a bridge between Purchasing and R&D, ensuring the low-carbon materials purchasing strategy and product eco-design strategy are consistent.

CIRCULAR ECONOMY COMMITTEE

This committee leads the work of the R&D, marketing and industrial networks on second life solutions for products – remanufacturing and aftermarket.

COMPENSATION POLICY, DRIVING SUSTAINABILITY PERFORMANCE

The Chief Executive Officer's compensation for 2022 is based in part on CSR-related performance criteria. Included in both his annual variable compensation and his long-term compensation, these criteria represent 20% of these components of his compensation. New indicators were also included in the compensation criteria of more than 1,500 Group executives in 2020. More specifically:

- › 20% of the objectives that determine their annual variable compensation are linked to

sustainable development criteria, one-quarter of which is tied to a CO₂ emissions reduction target (reduction of 0.75 MtCO₂eq. targeted in 2021);

- › 20% of the objectives that determine their long-term variable compensation are linked to sustainable development criteria, half of which is tied to a CO₂ emissions reduction target for 2023 – in line with the trajectory to meet the 2030 objective.

BUILDING A RESILIENT BUSINESS MODEL

Trends in the mobility market will be shaped by many external factors. Faced with these transformations, Valeo is determined to make its business model more resilient. To do so, the Group is relying on constants that transcend fads and show how easily its offering adapts to various possible scenarios.

THREE TRENDS SHAPING THE FUTURE OF MOBILITY

1

A more ambitious regulatory framework

2

Consumer take-up of electric vehicles

3

An accelerating electrification market

VALEO IS READY TO MEET THE CHALLENGES OF SUSTAINABLE MOBILITY

Electrification technologies adapted to all forms of mobility
(p. 20-21)

High- and low-voltage: Valeo leads the way in key drivers of the transition
(p. 22-23)

Cutting-edge expertise in thermal systems, essential to electric mobility
(p. 24-25)

THE GROUP HAS DEFINED TWO SCENARIOS FOR HOW MOBILITY MAY EVOLVE THROUGH 2030

BASELINE SCENARIO

2°C trajectory

A conservative projection, based on major regulatory and societal trends, in which a portion of individual mobility is shifted to public transportation

CITY SCENARIO

1.5°C trajectory

An even more favorable environment for new urban mobility methods, with an explosion in the number of shared and company vehicles

VALUE CREATION BY 2030 FOR VALEO

125

25% INCREASE IN SALES

BASE =

100

Valeo traditional scope

156

56% INCREASE IN SALES

TWO SCENARIOS FOR MOBILITY

Multiple regulatory and behavioral factors influence mobility market trends. Valeo has modeled two scenarios for 2030 to consolidate its leadership position, no matter what tomorrow holds.

THREE CROSS-CUTTING TRENDS

Regardless of the scenario, three things are clear:

1

There is good scope for growth. Increasing urbanization, a growing world population and rising GDP are driving up overall demand for mobility. The market for individual vehicles continues to expand, despite the development of public transportation and shared mobility solutions.

2

Demand for four-wheeled vehicles persists. The market for four-wheeled vehicles – trucks under 6 metric tons, driverless taxis, small electric vehicles – remains resilient. Consolidating a corresponding product offering is crucial.

3

Electric mobility is becoming widespread. Electric mobility is being adopted across all modes of transportation, meaning it still makes sense to develop a wide range of technologies, from 48V to high-voltage solutions.

BASELINE SCENARIO

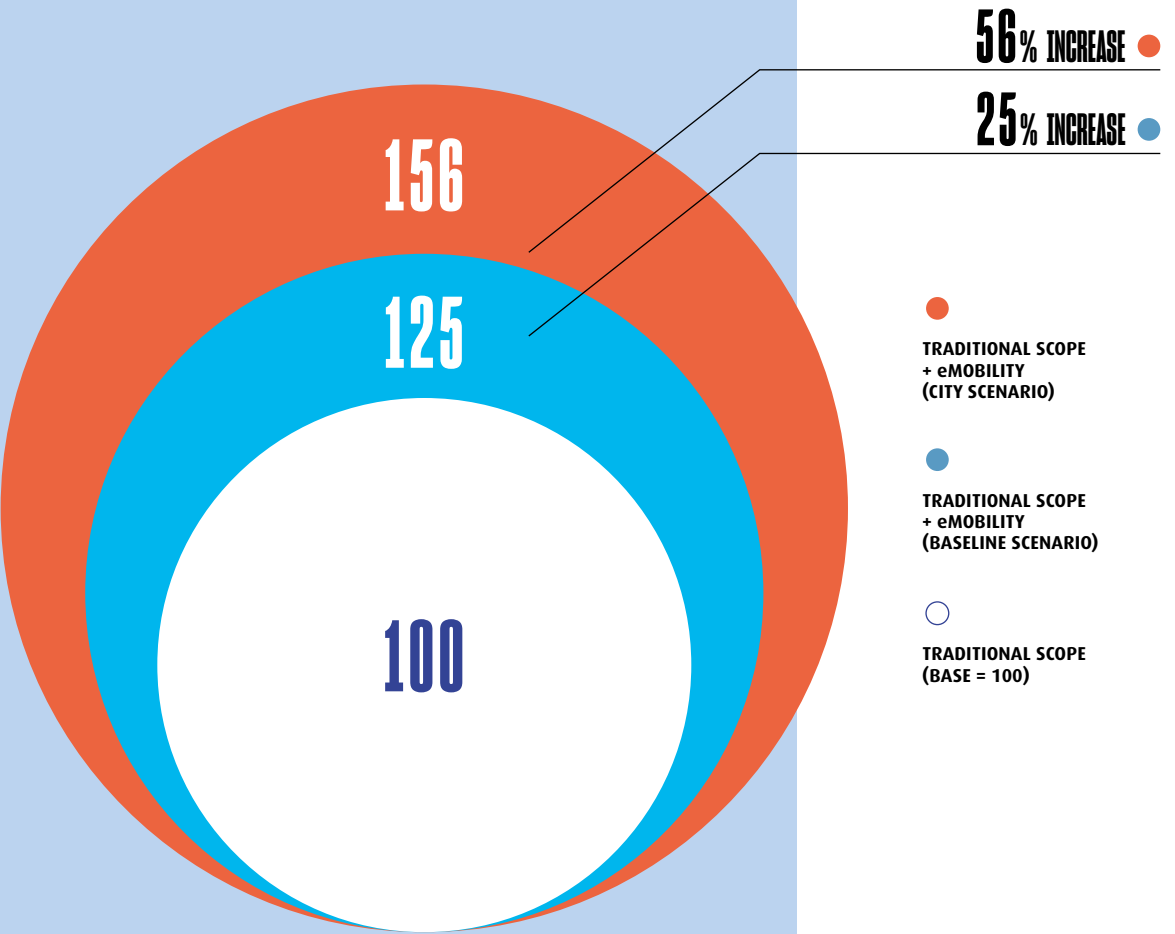
- › Passenger mobility: accelerating urbanization leads to an overall increase in personal mobility (up 20% compared with 2019), mainly absorbed by passenger vehicles and buses. Driverless taxis and micromobility vehicles open up new possibilities, fueling overall growth in demand.
- › Goods mobility: last-mile transportation is expected to represent 5.3 million units by 2030.

CITY SCENARIO







- › Passenger mobility: driven by new forms of on-demand transportation, personal mobility increases by 25% compared with 2019. Usage shifts from traditional four-wheeled vehicles to electric microcars, autonomous shuttles and other new technologies.
- › Goods mobility: last-mile transportation could represent 12.4 million units by 2030.

A ROBUST PORTFOLIO TO NAVIGATE CHANGE

No matter what the scenario, Valeo’s comprehensive portfolio of technologies runs the full gamut of electric vehicles, including two- and four-wheeled vehicles, for transporting people and goods. This breadth is a clear advantage in a market with many possible futures, ensuring that the Group will continue creating value regardless of what urban mobility has in store down the road.




PROJECTION: MILLION UNITS SOLD IN 2030

	4-WHEELS			2-WHEELS		DROIDS
	CARS AND LIGHT COMMERCIAL VEHICLES	DRIVERLESS TAXIS	LIGHT VEHICLES	EBIKES	ESCOOTERS	
						
BASELINE	104			93.4	69.8	0.2
CITY	93			257	83.5	2.2

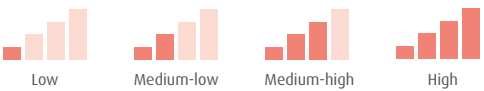
Source: McKinsey, Valeo, IHS.





CLIMATE-RELATED RISKS AND OPPORTUNITIES

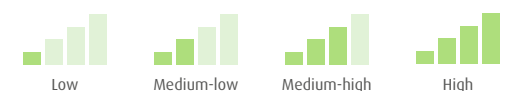
Valeo has identified the main climate-related risks and opportunities*.

DESCRIPTION OF THE RISK		TIME HORIZON	FINANCIAL IMPACT	MANAGEMENT COST	DESCRIPTION OF THE IMPACT ON VALEO'S BUSINESS	DESCRIPTION OF VALEO'S RISK MANAGEMENT PLAN
RISKS						
Physical risks						
Extreme events	Increased frequency of high winds, snow, hail, lightning, heat waves and floods	medium term			An increase in the frequency of extreme or chronic weather events could disrupt or even interrupt certain operations at different levels of the production and logistics chains, and could also have an adverse impact on the working conditions of employees. The Group could experience an increase in its protection, prevention, maintenance and insurance costs.	The exposure of Valeo sites and new projects has been mapped using a third-party tool based on historical natural event data. This tool reports the effects of natural events and serves to identify assets exposed now and in the future.
Chronic events	Rising temperatures and greater numbers of other natural events	long term				In addition, recommendations arising from the property and casualty insurer's audit reports following site inspections, regarding certain categories of natural events, are subject to specific monitoring. Special visits for natural events (especially floods, wind, etc.) are part of the risk management program, depending on the sites prioritized and the insurers' support capacities.
						Lastly, the Group has initiated a process with a third-party expert to assess the potential future worsening of the exposure of its assets to the effects of climate change (identification and ranking of the most exposed sites) in order to fine-tune the quantification of the impacts and measures to adapt to these effects.
Transition risks						
Regulatory developments	More ambitious CO ₂ emissions reduction regulations	short term			Valeo sees an increasingly strong, clear trend toward more ambitious environmental regulations. These regulations pertain to production processes and products. They can vary in intensity depending on the country and are set to become more numerous at various levels (countries, regions, cities).	Valeo is leveraging a product portfolio aligned with more ambitious CO ₂ regulations. The Group monitors the regulatory framework in the countries where it operates, particularly in its key markets of China, the United States, Europe, India and Japan. In this way, the Group can develop technologies that address these regulatory developments and anticipate new requirements to limit the short-term impact on its product portfolio.
Market developments	Potential risk of delay in the development of the electrification market	medium term				
						Valeo is managing the potential risk of slower-than-expected development in the electrification market for individual vehicles through: - electric vehicle charging solutions, such as Valeo's new charging station business (launched in 2021), - mass production capacities to optimize costs.
					For new forms of mobility, the Group offers electrification solutions as part of a platform-based approach geared toward reducing costs.	

* See the section relating to these topics in the methodological note for more information.



DESCRIPTION OF THE OPPORTUNITY	TIME HORIZON	FINANCIAL IMPACT	MANAGEMENT COST	DESCRIPTION OF THE IMPACT ON VALEO'S BUSINESS	DESCRIPTION OF VALEO'S OPPORTUNITY MANAGEMENT PLAN
OPPORTUNITIES					
Transition opportunities					
Market developments	Growth of electrification solutions for passenger vehicles	short term		<p>With ambitious goals for low-carbon mobility in Europe, regulations imposing low-carbon mobility, and the gradual phase-out of diesel vehicles in certain major European cities by 2025-2030, the electric vehicle market represents a growth opportunity for the Group.</p> <p>Moreover, end consumers are becoming increasingly demanding. They want electric vehicles equipped with batteries offering a more stable range and a longer lifespan, not to mention fast charging infrastructure. This is another growth opportunity for the Group.</p>	The private vehicle electrification market is a growth opportunity for the electric powertrains and electric motor thermal management businesses. Electrification and thermal management solutions for vehicles contribute to the reduction of CO ₂ emissions.
Market developments	Development of new forms of mobility and new uses	short term		<p>New forms of mobility are emerging in cities and changing the traditional model of car ownership. New private or shared mobility services and alternative mobility offers other than cars are growing exponentially and represent a growth opportunity for Valeo.</p>	<p>Valeo has built its growth strategy in the electrification market on substantial R&D investment to develop specific solutions, and is now positioned as a leading supplier of electrification solutions.</p> <p>As the world leader in solution electrification, the Group is leveraging its expertise and the skills of its teams to meet the technological needs resulting from new forms of mobility. The Group boasts the broadest portfolio of technologies and covers all segments and uses.</p> <p>In addition, the organization based on technological platforms allows a high degree of product and production process standardization, with the systematic reuse of technological components. This allows Valeo to respond to a diverse range of current and future calls for tenders from automakers.</p>
Development of new products and services	Development of technological solutions to reduce parts' CO ₂ emissions at all stages of the vehicle life cycle	medium term		<p>The regulations are changing and now make it necessary to analyze the vehicle's environmental impact over its entire value chain. Product life-cycle assessment reporting is expected to become a legal requirement in the years to come.</p> <p>Moreover, consumers increasingly want long-lasting or reusable products. The second-hand market is booming and provides an opportunity for Valeo to develop new products and services.</p>	<p>Valeo conducts life-cycle assessments of its products drawing on information from automakers, suppliers and sector databases. This information is used to create and develop products with less impact on the environment. Valeo has opted to build a broad plan for analyzing the carbon impact of its products by generalizing life-cycle assessments.</p> <p>Valeo's eco-design approach is based primarily on internal standards, which guide the project teams in their life-cycle analyses in the upstream research phase.</p> <p>Through its remanufacturing activity, Valeo puts its original equipment parts design and manufacturing expertise at the service of a remanufactured process restoring used parts to the same level of quality as a new part. In 2021, Valeo remanufactured more than 1 million parts.</p> <p>Backed by its collection and industrial expertise in this field, Valeo can support the ramp-up of other remanufacturing activities for other product families.</p>
Resilience	Strengthening of strategic positioning and ability to manage transition risks and opportunities	short term		<p>The applicable law and various benchmarks in the fight against climate change, market players and the rise of socially responsible investment (SRI) make the resilience of the business model a growth opportunity for Valeo.</p> <p>This results in potential impacts on the Valeo Group's evaluation on financial and non-financial criteria.</p>	<p>In response to growing demand to describe the factors underpinning the resilience of Valeo's business model, the Group has:</p> <ul style="list-style-type: none"> - built a carbon plan covering the entire value chain (suppliers, operational activities, end use of products sold by the Group – direct and indirect emissions, i.e., Scopes 1, 2 and 3). This undertaking also provides the Group with an opportunity to reaffirm its strategic positioning in terms of products that contribute to reducing CO₂ emissions; - implemented a financial and non-financial transparency approach. <p>These actions and the transparency of the information disclosed have earned Valeo recognition from the main non-financial rating agencies (such as CDP Climate Change, DJSI and MSCI) as one of the best automotive suppliers in terms of ESG.</p>



PERFORMANCE INDICATORS

SUMMARY OF VALEO’S GHG EMISSIONS AND KEY CAP 50 INDICATORS

		2009	2015	2016	2017	2018	2019	2020	2021	2025 (target)	2030 (target)
Total sales	€m	7,499	14,544	16,519	18,600	19,100	19,600	16,400	17,300	–	–
Sales – Scope of the Valeo environmental indicators (VEIs)	€m	7,448	14,056	15,138	16,750	17,661	18,749	14,991	17,137	–	–
Scope of the VEIs	Number of sites	118	117	120	132	140	167	151	144	–	–
ISO 50001	% of sites	–	8%	12%	13%	17%	–	20%	31 sites	40%	80%
Energy consumption (absolute terms)	GWh	1,433	2,005	2,077	2,250	2,476	2,096	2,455	2,760	–	–
Energy consumption (relative terms)	MWh/€m	192	143	137	134	140	142	163	161	134	–
Scope 1	MtCO ₂ eq.	0.085	0.142	0.146	0.167	0.175	0.196	0.171	0.193	0.110	0.047
Scope 2	MtCO ₂ eq.	0.336	0.650	0.711	0.764	0.871	0.966	0.460	0.582	0.542	0.232
Scopes 1 + 2	MtCO ₂ eq.	0.421	0.792	0.857	0.931	1.046	1.162	0.631	0.775	0.652	0.279
Scope 3 (cat. 1) Purchased goods and services	MtCO ₂ eq.	2.78	5.61	6.90	7.77	8.76	9.479	8.521	8.617	8.574	7.80
Scope 3 (cat. 11) Use of sold products	MtCO ₂ eq.	–	–	–	108.0	99.6	39.0 ⁽¹⁾	30.8	36.845	35.800	33.150
Total Valeo emissions (SBTi commitment)	MtCO ₂ eq.	–	–	–	–	–	49.64	39.952	46.237	45.305	41.486
Total Valeo emissions (CAP 50 plan)	MtCO ₂ eq.	–	–	–	–	–	49.64	40.479	45.006	37.901	27.875

(1) The downstream Scope 3 calculation was the subject of extensive methodological work by Valeo as early as 2016, something very few equipment manufacturers were doing at that time. The methodology was reviewed in 2020, resulting in 2019 emissions being revised to 39 MtCO₂eq. For more details, see “Scope 3 methodology, downstream use of sold products,” page 67.

METHODOLOGY

GREENHOUSE GAS INVENTORY METHODOLOGY

Valeo uses the Greenhouse Gas Protocol (GHG Protocol)* methodology to calculate the carbon footprint of the Group’s operations and value chain. The calculations include the following GHG Protocol categories:

- Direct GHG emissions (Scope 1);
- Indirect GHG emissions (Scope 2);
- Other upstream indirect GHG emissions (upstream Scope 3):
 - Inventory of categories 1-7, excluding category 8 because not applicable (Valeo does not have upstream leased assets);
- Other downstream indirect GHG emissions (downstream Scope 3):
 - Inventory of categories 9 and 11, excluding categories 10 and 12-15 because not applicable and/or not material.

The GHG data published in Valeo’s Climate Report may differ slightly from the data published in Valeo’s 2019 Universal Registration Document (URD) and other previous documents. In particular, the main differences relate to the following:

- Direct GHG emissions (Scope 1): Valeo has decided to also include direct emissions from its Research and Development centers, which are normally excluded from the environmental scope, and to recalculate emissions from refrigerant leaks;
- Indirect GHG emissions (Scope 2): Valeo has decided to also include indirect emissions from its Research and Development centers. In addition, Valeo has updated the calculation methodology and emissions factors as follows:
 - Valeo has adopted a market-based methodology using International Energy Agency (IEA)* emission factors, whereas up until 2019, the Group had calculated all of its GHG emissions using a location-based methodology,
 - Valeo has reviewed all emission factors used and updated them as appropriate. When available, the 2018 Association of Issuing Bodies (AIB) residual mix factors have been used. Where these factors were not available, in some countries Valeo has used 2019 IEA national emission factor data,
 - To report all data in carbon dioxide equivalent (CO₂eq.), Valeo has added together emissions of several GHGs including carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O);
- Other indirect downstream GHG emissions: Valeo has revised the calculation of downstream emissions in comparison with the method used in 2019. This new method is already included in Valeo’s 2020 Integrated Report, and has been externally audited in accordance with the French law on the transparency of non-financial information.

SCOPE 3 METHODOLOGY, DOWNSTREAM USE OF SOLD PRODUCTS

In accordance with the recommendations on identifying and reporting the volumes of indirect CO₂ emissions relating to Valeo’s operations, the Group undertook extensive work in 2017 to lay down a methodology for calculating emissions relating to the use of its products, in the absence of existing methodology in the industry:

- in view of the wide range of uses offered by Valeo products, which vary depending on the choices made by automakers on which Valeo only has a certain amount of information on the precise amount of emissions from its products, this work drew on the modeling of its products’ carbon impacts and was based on the parameters set out below;
- the work benefited from scientific and technical advice from Emisia SA, a branch of the Applied Thermodynamics Laboratory of the University of Thessaloniki (Greece) and an expert in modeling transportation-related CO₂ impacts recognized by the European Commission.

Valeo’s approach was to evaluate the level of emissions of products representative of the diversity of its product portfolio throughout their use phase, which most often corresponds to the lifespan of a vehicle, factoring in the following parameters:

- the products’ weight and power consumption characteristics;
- the technical characteristics of the vehicles fitted with Valeo products through a segment-specific approach, taking into account the vehicles’ specific uses (driving conditions, product life);
- the penetration of Valeo technologies in the market and within the specific segments reviewed;
- the characteristics of the global market;
- Valeo’s annual sales of the technologies taken into account for this calculation.

This work was continued and expanded on in 2020 as part of the development of Valeo’s carbon plan, as CO₂ emissions relating to the use of Valeo products represent the most significant source of so-called Scope 3 emissions. This work involved the following actions in 2020:

- review of the accounting of products’ nominal carbon impact;
- review of the relevant emissions calculation cycle using the Worldwide harmonized Light Vehicles Test Procedure (WLTP) so as to reflect real-life conditions of use as closely as possible;
- integration of the carbon impact of the energy (fossil fuel or electric) consumed by the various types of vehicles in which Valeo products are installed, allowing well-to-wheel emissions to be calculated on a regional basis;

* See glossary, pages 71-72.

• integration of all Valeo product families so as to cover a significant portion of the Group’s annual sales. This methodological review received scientific and technical support from Emisia SA in 2020. It resulted in a revision of emissions for 2019 to 39 MtCO₂eq. Under the new methodology, emissions for 2020 totaled 30.8 MtCO₂eq., a reduction of 21% compared with 2019.

As part of the carbon plan for 2030, Valeo has set the objective of reducing emissions linked to the use of its products by 15% in absolute terms compared with 2019. This objective was constructed on the basis of individual vehicle penetration scenarios and new forms of mobility by global region, integrating projections from several sources and taking into account the Valeo Group’s growth outlook. It is consistent with the reference framework set by the SBTi and follows its cross-sector methodological recommendations for calculating Scope 3 emissions.

CLIMATE CHANGE RISK AND OPPORTUNITY MAPPING METHODOLOGY

The Valeo Group has initiated a process to identify the risks and opportunities related to climate change, using the classification proposed by the TCFD, which distinguishes between physical risks (extreme and chronic weather events), transition risks (legal/regulatory risks, market risks, technological risks, image/reputation risks) and transition opportunities (markets, products/services, efficient use of resources, energy sources, resilience). Transition risks and opportunities relate to the shift to a low-carbon economy, and physical risks include potential impacts on operations, human resources and the supply chain.

This risk mapping is part of the Group’s overall risk management system and has several steps:

- identification of risks and opportunities using various methods, including interviews with key stakeholders;
- assessment and prioritization of risk and opportunity scenarios;
- projections and updating of scenarios;
- definition and implementation of adaptation plans aimed at dealing with and improving risk management and limiting the impact and likelihood of occurrence of said risks as much as possible.

The analysis was conducted based on the following perspectives:

- the time horizon: short (1 to 5 years), medium (5 to 10 years), long (more than 10 years);
- financial impact: low, medium-low, medium-high, high;
- management cost: low, medium-low, medium-high, high;
- necessary adaptation measures, implemented or in the process of being implemented.

The initial findings of this risk and opportunity mapping, the result of joint work by the Risk Management and Sustainable Development and External Affairs departments, were presented to the Risks Committee and the Audit & Risks Committee in November 2021. The aim is to deepen and continue the process in the years to come.

In 2022, to clarify the understanding and impact of weather events, Valeo plans to fine-tune the methodological tools for assessing the risks associated with climate change (particularly physical risks) in line with the Representative Concentration Pathway (RCP) and Shared Socioeconomic Pathways (SSP) scenarios modeled by the IPCC.

Following changes to the reporting guidelines for these risks (aimed at ensuring data comparability and standardization), Valeo aims to enrich the present reporting for its stakeholders.

The climate challenge is an integral part of the Board of Directors’ role. A Governance, Appointments & CSR Committee has been established, and a Lead Director on challenges stemming from the climate transition has been appointed by the Board of Directors. The Audit & Risks Committee also reviews non-financial risks, including those related to the consequences of climate change.

SCENARIO METHODOLOGY

The scenarios reflect Valeo’s understanding of automotive market trends through 2030 and have been designed based on various external sources (United Nations; Eurostat; National Household Travel Survey; Mobility in Germany Survey; World Bank; Statista; London Travel Demand Survey; US Census Bureau; IHS Markit Sales; various city transportation reports, Beijing Transportation Report, Mobilität in München, Copenhagen: The Cycling City; various government statistics, Statistics Canada, Korean government statistics, Japanese Ministry of Land, Infrastructure, Transport and Tourism; various micromobility reports and databases, Civity, Populus, Ride Report; public press announcements; expert estimates; (industry) interviews; etc.).

The scenarios are subject to strict copyright rules and are the property of the third party contracted to develop them; Valeo will therefore not share the methodology publicly, as this would infringe on the third party’s copyright and the relationship of trust that Valeo has developed with them. The main assumptions and variables used, as well as the timeline and all relevant information, are included in the description of the scenarios in Chapter 3 of this report.

SBTi METHODOLOGY

Valeo has used the SBTi framework to set its 2030 targets. Reduction targets were calculated in accordance with the absolute contraction approach methodology. Valeo has decided to align its objectives with a 1.5°C scenario by establishing targets for reducing Scope 1 & 2 emissions by 75% in absolute terms in 2030 compared with 2019. Similar absolute targets have been set for Scope 3 emissions.

CROSS-REFERENCE TABLE AND FORWARD-LOOKING STATEMENTS

TCFD CROSS-REFERENCE TABLE

TCFD Recommendations		Valeo 2021 Climate Report	Valeo 2021 URD	Valeo 2021 CDP Climate
Governance				
Disclose the organization’s governance around climate-related risks and opportunities	a) Describe the board’s oversight of climate-related risks and opportunities	3.1	4	C1/(C1.1b)
	b) Describe management’s role in assessing and managing climate-related risks and opportunities	3.1	4.1.1	C1/(C1.2)/(C1.2a) C2/(C2.2)/(C2.2a)
Strategy				
Disclose the actual and potential impacts of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning where such information is material	a) Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term	4.2	2.1/4.3.1	C2/(C2.1) C2/(C2.2)/(C2.2a) C2/(C2.3)/(C2.3a) C2/(C2.4)/(C2.4a)
	b) Describe the impact of climate-related risks and opportunities on the organizations’ businesses, strategy and financial planning	4.2/4.3	4.3.3	C2/(C2.3a) C2/(C2.4a) C3/(C3.1)/(C3.1a)/ (C3.1c)/(C3.1d)
	c) Describe the resilience of the organization’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	4.3	4.1.3/4.3.2	C3/(C3.1a)/(C3.1b)

TCFD Recommendations		Valeo 2021 Climate Report (VCR)	Valeo 2021 URD	Valeo 2021 CDP Climate
Risk Management				
Disclose how the organization identifies, assesses and manages climate-related risks	a) Describe the organization’s processes for identifying and assessing climate-related risks	2021 VCR - 6.3	2021 URD - 2.1/4.3	C2/(C2.1) C2/(C2.2)/(C2.2a)
	b) Describe the organization’s processes for managing climate-related risks	2021 VCR - 4.2/4.3	2021 URD - 2.1/4.3	C2/(C2.1) C2/(C2.2)
	c) Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization’s overall risk management	2021 VCR - 6.3	2021 URD - 2.3/4.3	C2/(C2.2)
Metrics and Targets				
Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material	a) Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process	2021 VCR - 2.2/3.2/3.3	2021 URD - 4.2	C4/(C4.1a)/(C4.1b) C9/(C9.1)
	b) Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks	2021 VCR - 3.2/3.3	2021 URD - 4.5.3	C5/(C5.1) C6/(C6.1)/(C6.2)/ (C6.3)/(C6.4)/ (C6.4a)/(C6.5)/ (C6.10)
	c) Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets	2021 VCR - 2.2	2021 URD - 4.5.3	C4/(C4.1)/(C4.1a)/ (C4.1b)

FORWARD-LOOKING STATEMENTS

This document may be updated according to a timeframe to be defined by Valeo. The carbon plan and the scenarios outlined in this document are based on external factors (beyond Valeo’s control), such as the climate (the consequences and effects of the climate on Valeo’s business and targets), the market (decisions made by automakers), regulations (implementation by lawmakers of measures with varying levels of incentives for decarbonizing transportation, with a direct effect on market growth), the technological maturity of the sector (particularly in areas of research outside Valeo’s scope) and supply crises.

GLOSSARY

Carbon-free energy

Any energy whose production does not result in GHG emissions. Renewables and nuclear power are considered carbon-free energies.

CDP

The Climate Disclosure Project is an organization whose purpose is to release reports on the environmental impact of major companies around the world. It also issues a questionnaire for companies to rate their commitments, transparency and other factors related to their environmental impact.

CLEPA (European Liaison Committee of Manufacturers of Equipment and Auto Parts)

Industry body of European automotive suppliers.

Corporate Average Fuel Economy (CAFE)

European regulation imposing an average emission threshold not to be exceeded by automakers on their new vehicles.

Eco-design

An approach that consists of anticipating the environmental impact of a product as of the design phase and reducing it to a minimum while respecting existing technical constraints.

ERTRAC (European Road Transport Research Advisory Council)

European council of mobility sector stakeholders (automakers, equipment suppliers, consumers, energy suppliers, etc.). Its purpose is to carry out studies and research for the mobility sector in order to inform policy.

GHG (Greenhouse Gas)

Gases which absorb infrared rays emitted by the Earth’s surface, contributing to the greenhouse effect.

GHG (Greenhouse Gas) Protocol

See Greenhouse Gas (GHG) Protocol.

Greenhouse Gas (GHG) Protocol

Multi-stakeholder partnership between businesses, NGOs, governments, academic institutions and other entities, organized by the World Resources Institute and the World Business Council for Sustainable Development. Launched in 1998, it aims to develop internationally accepted GHG accounting and reporting standards and tools, and to promote their adoption in order to achieve a low-carbon global economy. All GHG Protocol standards and guidelines can be found at www.ghgprotocol.org.

IEA (International Energy Agency)

International organization that regularly issues studies and reports on future developments in the energy market (demand, supply).

ISO 50001

International standard on energy management systems.

ITF

Standing forum of transportation ministers of OECD and associated countries (India, China, Indonesia, etc.). Valeo is one of the only automotive suppliers with a seat on the IFT’s Corporate Partnership Board.

Mobility

Includes all modes of transportation for both people and goods.

SBTi (Science Based Targets initiative)

Organization whose purpose is to propose methodologies and tools for setting CO₂ emissions reduction targets for companies. It defines targets in line with global emissions reduction objectives, in particular those of the Paris Agreement, and with the current state of scientific knowledge on the subject.

Scopes 1, 2 and 3

Scope 1 covers CO₂ emissions directly emitted by the Group’s activities (including combustion emissions from stationary sources on sites, emissions from fuel combustion by Group vehicles, direct emissions from non-energy processes such as the incineration of VOCs, and direct fugitive emissions relating to refrigerant leaks). Scope 2 covers CO₂ emissions relating to the consumption of electricity, steam, compressed air and other sources. Scope 3 covers other CO₂ emissions relating to purchases of products used in industrial processes, and the transportation of goods and people, as well as indirect CO₂ emissions relating to the use of Valeo products.

TCFD (Task Force on Climate-Related Financial Disclosures)

Working group whose purpose is to help companies improve the transparency of their climate-related financial disclosures.

WLTP

Worldwide harmonized Light Vehicles Test Procedure.

Graphic and editorial design: **HAVAS PARIS**

Written by: Camille Lamouche, Valeo Group teams.

The Climate Report is published by the Valeo Group.

Printed in France by Advence.

Legal filing on publication.

Printed on Nautilus Superwhite paper – fully recycled and FSC certified.

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FOR SMARTER MOBILITY

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